FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

DECEMBER, 1953

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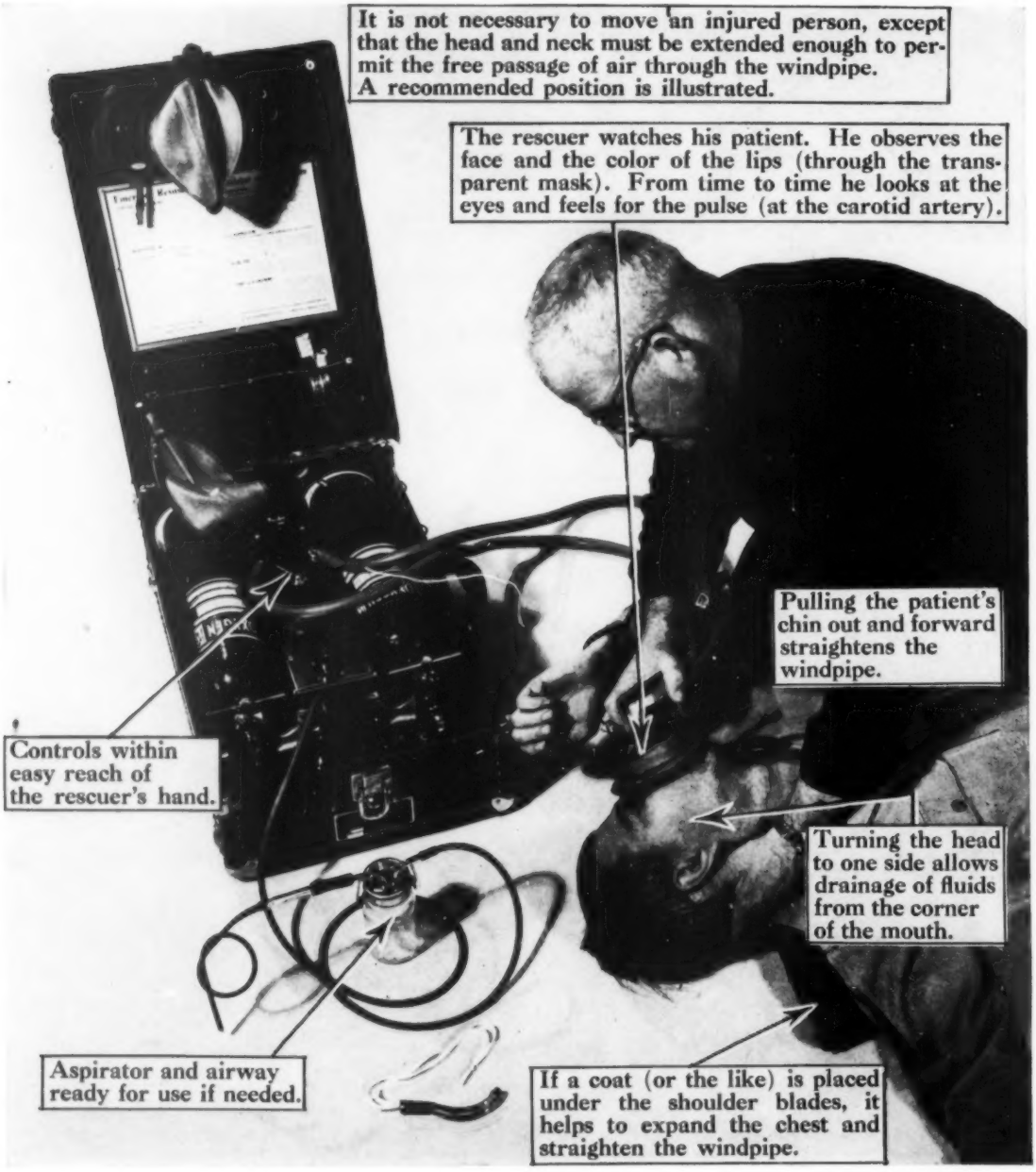
Long Beach (Calif.) fire stations say "Merry Xmas!"
(See page 1105)

A CASE - SHEPPERD - MANN PUBLICATION

New.... Illustrated Booklet on Resuscitation


It is not necessary to move an injured person, except that the head and neck must be extended enough to permit the free passage of air through the windpipe. A recommended position is illustrated.
The rescuer watches his patient. He observes the face and the color of the lips (through the transparent mask). From time to time he looks at the eyes and feels for the pulse (at the carotid artery).
Pulling the patient's chin out and forward straightens the windpipe.
Controls within easy reach of the rescuer's hand.
Turning the head to one side allows drainage of fluids from the corner of the mouth.
Aspirator and airway ready for use if needed.
If a coat (or the like) is placed under the shoulder blades, it helps to expand the chest and straighten the windpipe.

If you use an Emerson
write at the earliest opportunity
for your copy
with the compliments of

J. H. EMERSON COMPANY

32 COTTAGE PARK AVENUE, CAMBRIDGE 40, MASSACHUSETTS

Federal *lights and sirens* give your equipment *extra* DIMENSION

The "aero-quad", on Diamond T chassis manufactured by Midwest Fire & Safety Equipment Co. of Indianapolis Ind., features a 55 ft. Memco electric aerial ladder, Hale 2-stage, push-button primed centrifugal pump, 200 gal. booster tank, 2 booster reels and hose bed with 1200 ft. of 2½ in. double jacket hose. "Extra-dimension" protection of a Federal Beacon Ray light on the cab and a Federal 66L coaster siren on the fender.

The *extra-dimension* of Federal's warning equipment releases the above extraordinary "aero-quad" from the limitations of single-plane protection. The famous Beacon Ray light flashes a visual warning in a 360° dimensional arc to front, sides and rear. The coaster siren's authoritative roar breaks into the dimension of sound, piercing high-level traffic noises, instantly clearing the right of way.

***FEDERAL QUALITY* complements the finest fire-fighting equipment now being delivered.**

***SPECIFY FEDERAL* and give your equipment "extra-dimension" protection.**

FEDERAL ENTERPRISES, Inc.

Formerly: Federal Electric Company, Inc.

8702 South State Street **Chicago 19, Illinois**

FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

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MEMBER
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Associated Business Publications

Beyond Recall

"Four things come not back:
The spoken word;
The sped arrow;
Time past;
The neglected opportunity."
OMAR IBN AL-HALIF

THIS is the time of the year when we pause to take stock of accomplishment, of progress made—and of missed opportunities.

- It is a time for counting our blessings, and giving thanks for them—not worrying about those that we missed.
- It is a time for looking ahead, for planning for the new year, for making our job and our fire service more efficient and productive.
- We hope FIRE ENGINEERING will be included in those plans and programs. We, too, have our objectives: to make this Journal of greater value to an even greater family of readers and advertisers in the months to come; and by furthering the nation's fire service, through it, to reverse the mounting costly and tragic fire losses.

May your Christmas be bright and merry, and may the New Year bring you opportunities without measure—and their happy realization.

The Publishers

FIRE ENGINEERING

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"*Specialized* Leadership"

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No other hose but FABRILON gives you this. The extreme compactness of FABRILON as compared to ordinary plain-weave hose is immediately evident. The great *strength* of FABRILON and how it is combined with *Light Weight*, *Flexibility* and *Compactness* is a story of efficient combination of high grade materials so as to produce maximum performance. Pound for pound there is roughly *twice the strength*, *wear* and *service* built into the compact FABRILON coil above as compared to the heavier, bulkier, white plain-weave hose.

FABRIC FIRE HOSE COMPANY

THE ONLY EXCLUSIVE MANUFACTURER OF FIRE HOSE IN AMERICA

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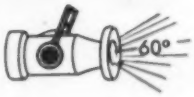
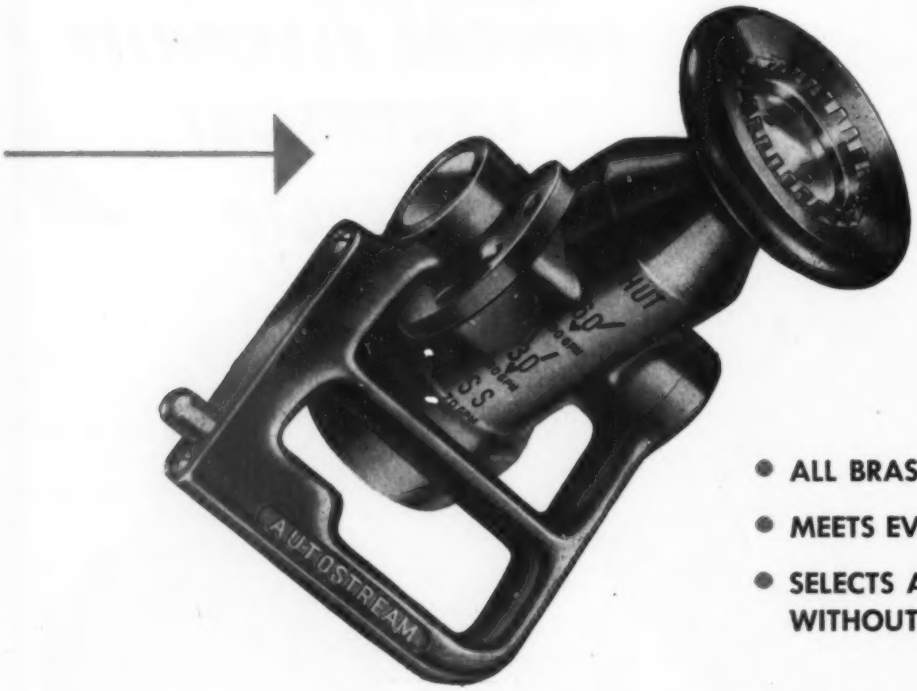
Automatic Shut-off —
Water pressure keeps it shut

Effective long-distance Fog. Saturating indirect waterfog application

Full, Solid Fog-Pattern, personnel protection, instant smothering



Perfect straight stream.
Non-Feathering, Far-reaching



- ALL BRASS
- MEETS EVERY FIRE PROBLEM
- SELECTS ANY STREAM WITHOUT TWISTING

AUTO-STREAM® fog nozzle

★ **AUTOMATIC** — Finger-tip control gives you instant stream selection. Delivers the right stream — day or night — without twisting or turning in less than a second.

★ **POSITIVE POSITIONING** — Stream selected STAYS PUT. Drop it, hit it, beat it . . . Auto-Stream nozzle can't pull out of position until YOU move it.

★ **DURABLE** — Built of lifetime Akron Brass materials — breakproof handle, shockproof bumper, tough, all brass body. Can't get out of alignment even when dropped or bumped.

★ **NEVER NEEDS LUBRICATION** — Works easily under all pressures. No back-lash.

AKRON BRASS MFG. COMPANY, INC.

WOOSTER, OHIO

RESEARCH KEEPS **B.F.Goodrich** FIRST IN RUBBER

This hose gets into action faster, cuts loading time, saves space

HERE's the hose that's easier to handle—on or off the truck.

Fire King, developed by B. F. Goodrich, is 15% lighter—50% stronger—and 100% more satisfactory for the fire company that prides itself on speed and efficiency out on a run or back at the station.

Fire King is unusually light and flexible because of a chemically-produced fibre used *only* in B. F. Goodrich hose. This fibre is used as "filler" cords—the cords that go around the hose, and give it extra strength to take on top pressures. In fact, actual service tests prove that Fire King, tested to 600 pounds pressure, is 50% stronger than standard fire hose which is tested to only 400 pounds pressure.

Its easy "rackability" has made a Fire King enthusiast out of Chief Myrle Hunter (above at left), watching Delbert Maker do a smooth one-man job of racking Fire King hose on the Guthrie (Oklahoma) Fire Department pumper truck. Chief Hunter says Fire King coils and racks with no effort at all because it's light and *never twists*—yet it has all the strength needed—and then some.

Next time you're replacing or adding hose, ask your BFG Fire Hose Distributor to show you a sample of Fire King. Compare it with your present hose and see for yourself why Fire King's your smartest, most economical buy!

The B. F. Goodrich Company
Dept. M-101, Akron 18, Ohio

Without cost or obligation, please
☐ send me more information on B. F. Goodrich fire hose.
☐ have a BFG Fire Hose Distributor see me.

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B.F.Goodrich
INDUSTRIAL PRODUCTS DIVISION

JOHN BEAN

adds a new dimension to firefighting

the new combined true high-pressure fog and volume fire-fighter

Fast-striking high-pressure fog backed up by slugging volume power now makes it possible for you to fight fires as never before. Bean engineers add this greater dimension to firefighting techniques with their new combination high-pressure fog and volume fire-fighter. It boasts the biggest firefighting wallop ever packed into one unit. Two famous Bean pumps (operating simultaneously or separately) offer you the chance to attack the fire with 2 high-pressure and 4 volume lines. A 500-gallon tank allows you to start pumping seconds after you arrive at the scene. You can get in fast and keep slugging for a "quick kill."

Besides this new approach to firefighting methods, Bean engineers have fashioned a streamlined, sleek-looking truck with a low center of gravity for safe riding at high speeds. 5 full-size compartments furnish more than 45 cubic feet of storage space for supplementary equipment. A rear fill hopper with an easily removable strainer makes filling a simple operation. For fighting grass, prairie, or other running fires, both high-pressure lines can be used while the truck is in motion.

OUR BEST SALES TALKS COME FROM THE CHIEFS WHO USE BEAN FIRE-FIGHTERS

Write these men for their opinion of the unit.

Fire Chief Eugene Davidson—Bedford, Penn.

Fire Chief R. L. Henry—Annandale, Virginia

JOHN fmc BEAN

TWO-FISTED FIRE-FIGHTERS

Can be mounted on most standard truck chassis

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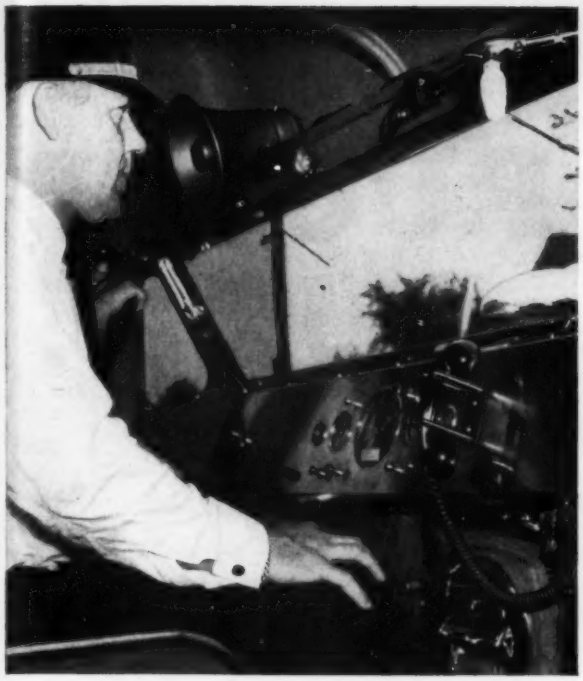
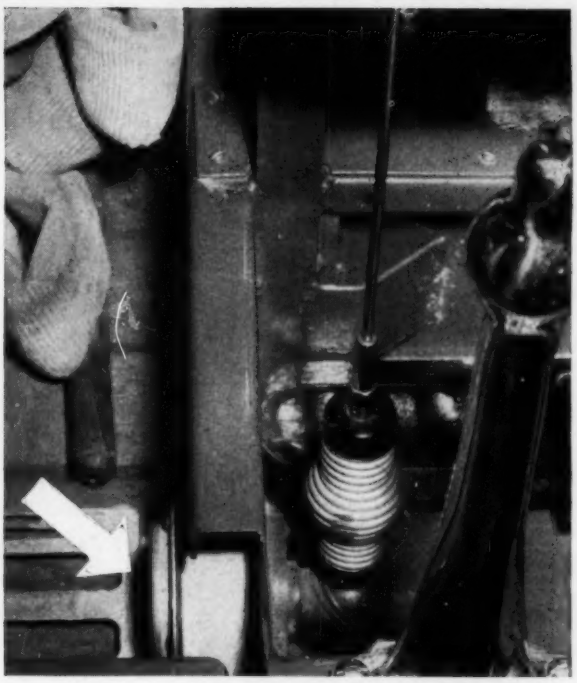
A PRODUCT OF FOOD MACHINERY AND CHEMICAL CORPORATION

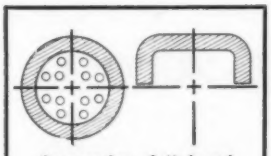


Use of top-grade equipment, cleanly installed and carefully maintained, has sparked Cleveland Fire Department's reputation for efficient service



Arrow points to regular 4-inch conduit box at base of mobile radio antenna. Use of rubber gaskets makes conduit boxes completely weatherproof

High installation standards...RCA mobile equipment give Cleveland Fire Dept. trouble-free communications



Cross-section of U-shaped lead channel *(right)* used to preserve wiring under floor mats. Raw stock from ordinary lead-covered cable *(left)* is hammered to shape over form

"Make it right in the first place," advises Charles G. Harris, Superintendent Fire Alarm System

"No exposed wiring is our first rule," says Chief Harris. "We use regular 1-inch conduit to carry all wiring, including battery cables. To preserve connections which are exposed to weather, we use regular 4-inch conduit boxes—*never tape.* We weatherproof the conduit boxes with rubber gaskets.

"We adhere to several other basic installation rules, too. For example: Never run a hot wire under a vehicle unless it is fused close to the power source. Always use porcelain bushing to wire through a wall—tape wears away too rapidly under normal vehicle movement. Always cover cables under floor matting with U-shaped lead covering—it saves wear, keeps out dampness. And most important, *use mobile radio equipment you can count on.*"

Actual operation in many installations has proved that RCA 2-Way Radio stays on the job at those critical times when you need good communications most. Units are built to take rough riding, motor vibration, extreme heat and cold. They require a minimum of outage time for service and repairs. Simplified construction permits quick installation behind the driver's seat, in compact weatherproof boxes on the running board (older apparatus), or in any convenient space.

Whether your operation calls for RCA *Fleetfone* (30-50 mc), *Carfone* (152-174 mc) or new uncrowded UHF (450-470 mc) communication equipment, there's an RCA unit to do every job right. Each is backed by 25 years of intensive practical experience in manufacturing *radio* and other electronic equipment. *And remember,* nation-wide service facilities are provided by the RCA Service Company.

To get the full installation and maintenance story of the Cleveland operation, send the coupon below for our *free* reprint, *"Cleveland Fire Department's Prescription for a Trouble-Free Two-Way Radio System."*

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COMMUNICATIONS EQUIPMENT CAMDEN, N. J.

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for RUGGED DUTY !

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PROTECTION—COMFORT—SERVICE

You will find the type of fabric exactly suited to your needs in our wide selection of rubber materials. You can absolutely depend on the softness and flexibility of these high grade materials to meet your most exacting requirements for lasting comfort, rugged service and greater efficiency on the job.

For complete information on our full line of firemen's protective clothing, see your Midwestern dealer. A letter to the factory will also bring you literature and material samples for your inspection.

NONE GENUINE WITHOUT THIS TRADE MARK

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Manufacturers of the Famous **MACKINAW Coats**

Reading, Pa. picks . . .

NEW Reading, Pa. Pumper has all-steel cab, available on all custom built models. Driver's seat is fully adjustable, accommodates three men comfortably.

WARD LaFRANCE

This Ward LaFrance Pumper . . . with its modern all-steel cab . . .
was recently delivered to Reading, Pa.
Why did this progressive Pennsylvania city choose Ward LaFrance?

Because Ward LaFrance Pumpers have long been famous for their fine performance. And deservedly so. For over 30 years, these pumpers have demonstrated their ability to operate under all kinds of fire-fighting conditions.

CHOOSE WARD LA FRANCE YOURSELF Modernize your community's fire department with ruggedly-built Ward LaFrance equipment. Choose from pumpers in 130, 150, 200, 240 and 260 H.P. with the weight-to-horsepower ratio necessary for fast get-aways and hill-climbing. These pumpers are equipped with Waterous split housing pump . . . surplus gallonage far exceeding rated capacity . . . flat horizontal booster tank . . . exceptional hose capacity . . . other outstanding features.

Contact your Ward LaFrance representative. Let him help select the equipment that fits your community's requirements.

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1462 Liberty,
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stronger, more flexible hose made with

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POLYESTER FIBER

It's lighter to carry... gets into action faster

Fire hose that's lighter and more flexible . . . easier to handle . . . yet stronger than ordinary hose of the same diameter! That's the news "Dacron" polyester fiber has made possible. "Dacron" is used as the load-carrying "filling" cord that reinforces the hose. The exceptional strength of this famous man-made fiber, plus its lightness and flexibility, results in a hose that offers strength without bulk . . . that's at least 15% lighter . . . easy to coil and uncoil.

More than two years of field testing have proved the advantages of this new hose in action. It will soon be available in volume. Plan now to take advantage of the performance extras that "Dacron" gives to fire hose. Before you place your next order, be sure to ask your supplier about hose made with "Dacron". E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Dept., Wilmington 98, Del. *REG. U.S. PAT. OFF.

DACRON polyester fiber

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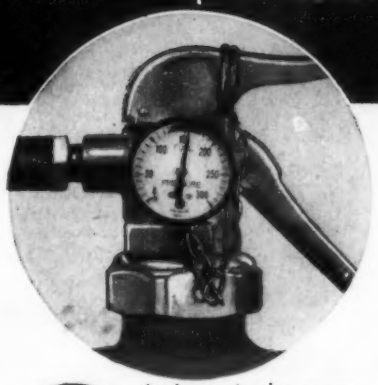
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

THEY'RE PRESSURIZED - READY TO GO!

Now ALFCO DRY CHEMICAL FIRE EXTINGUISHERS

PDC-5 PDC-10 PDC-20 PDC-30



A glance at valve gauge indicates whether unit is in operating order.

Unmatched in Fire Smothering Efficiency!

WHEN FIRE HITS, THESE NEW ALFCO DRY CHEMICAL MODELS ARE READY TO STOP IT

With Valve and Siphon Assembly removed as single unit, ample size opening is provided for charging.

Simply pull pin and squeeze lever. No gadgets to operate, no last minute pressurizing from a gas cartridge or cylinder, no inverting, no bumping, no shut-off nozzle on the hose needed. They're ready to go!

Their fire-smothering efficiency is aided by a scientifically designed Alfco Discharge Nozzle which fans the Dry Chemical outward and downward in wide pattern and with great density. Their 150 (plus 25 minus 0) psi. air (or nitrogen) pressure maintains an excellently uniform duration of the Alfco Dry Chemical discharge pattern.

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The Alfco Dry Chemical Valve is completely new also. It is ruggedly built. No special tools needed. Contains few parts. Equipped with Safety Relief Valve. Complete valve and siphon tube assembly removes as a single unit for recharging. They're water-tight, and noncorrosive. Tested for vibration and for operation at temperatures from minus 40° F. to plus 150° F. An Alfco Moisture Trap provides for pressurizing with air.

Write us for illustrated literature and full details of their special features.

Model numbers designate the capacities by weight of Dry Chemical.

Approved by Underwriters' Laboratories for Class B and C Fires.

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AMERICAN-LAFRANCE-FOAMITE Corporation

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ALFCO

DEPENDABLE SERVICE IS BUILT INTO a SEAGRAVE

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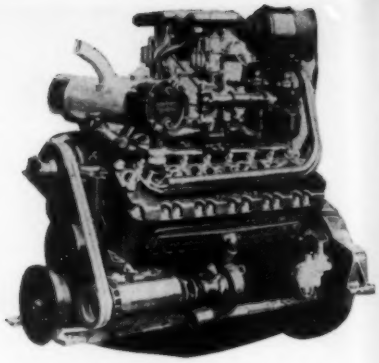
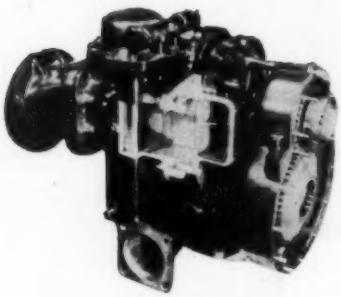
This fine watch principle applies to the engineering and construction of Seagrave Fire Apparatus. Motors, bodies, pumps, frames, ladders, cabs and other important parts are of Seagrave design and manufacture. They operate as a unit to give your city the most efficient fire service it is possible to produce.

The records of city after city, throughout the years, prove that the Seagrave method of construction is the one that gives the most trouble-free and lowest cost service. That's why Seagrave has become THE GREATEST NAME IN FIRE APPARATUS.

THE SEAGRAVE CORPORATION
Columbus, Ohio
Bickle-Seagrave Ltd.—Woodstock, Ont.

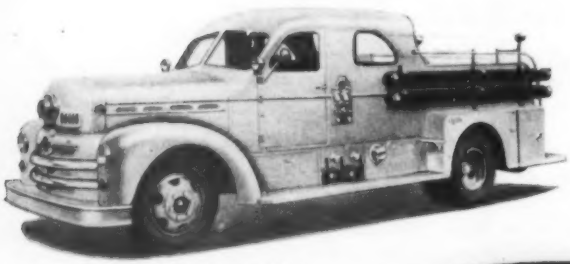


SEAGRAVE BUILT MOTORS
—proven to be the most efficient for fire service.

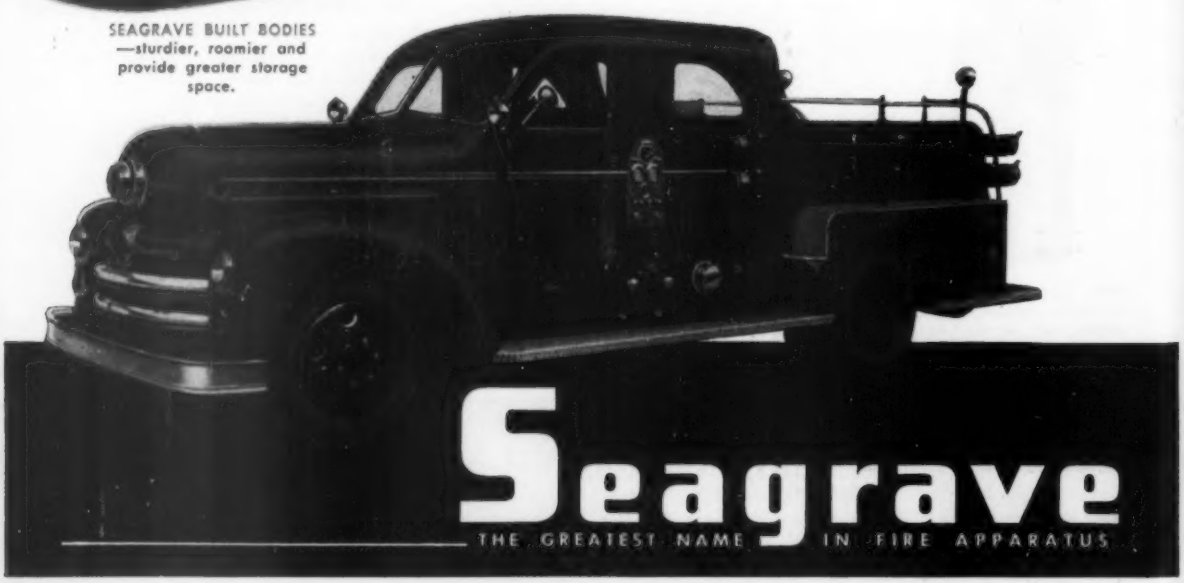


SEAGRAVE BUILT PUMPS
set a record for dependable performance throughout the years.

SEAGRAVE BUILT LADDERS
—the safest in fire service.



SEAGRAVE BUILT BODIES
—sturdier, roomier and provide greater storage space.



Seagrave
THE GREATEST NAME IN FIRE APPARATUS

5 REASONS WHY

Motorola 2-way radio is *FIRST CHOICE*

75% of radio-equipped fire departments choose Motorola systems

1 **Reliability**—Top quality components and workmanship guarantee reliability under all conditions—the answer to fire-fighting's need for uninterrupted communications.

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3 **Low Maintenance Costs**—Motorola won't compromise with quality. The results are consistently low maintenance costs, top performance *always!*

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5 **Advanced Design**—Motorola years-ahead engineering assures better round-the-clock performance—keeps you in step with possible changes—*without* loss of investment.

For complete details, write Dept. 2286-FE today!

BASE STATION

Base station transmitter and receiver are housed in sturdy cabinet to permit easy transportation, installation and maintenance. Comes with built-in controls for local, extended local or 2-wire or 4-wire remote control operations.

MOBILE UNIT

The mobile unit is constructed to give dependable communications under all conditions. It's ruggedly built to take jolts and shocks. Splashproof and weatherproof.

2-way Radio

Motorola

Communications & Electronics, Inc.

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Handclasp of a friend-in-need

There's confidence in the very "feel" of the world famous C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers. The quick-acting "Squeez-Grip" fits your hand naturally like a handclasp ... hangs right ... carries right ... works right. You're in complete command of the situation instantly ... no fumbling ... no fatigue.

From the non-conducting, shatterproof discharge horn to the high strength, durably finished cylinder, you get top quality construction that results in a lifetime of satisfactory service. Because of the very few working parts and corrosion resistant materials throughout, the total cost to you over the years is less than other initially lower priced makes ... fire after fire, recharge after recharge, without trouble.

It's not hard to see, when you fully compare and try, why C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers are your best buy for killing flammable liquid and electrical fires, as well as some surface fires involving ordinary combustible materials. Sizes range all the way from 2½ to 100 pounds capacity ... all fully approved by the Underwriters' Laboratories, Inc., Factory Mutual Laboratories, Armed Forces and Government Bureaus.

With C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers the penetrating carbon dioxide is a clean, dry, non-damaging, non-conducting, inert gas ... smothers fire instantly, leaves no after fire mess ... harmless to equipment, materials and finishes ... even food is still perfectly edible.

Act now for complete free information on these first-rate, sure-acting fire extinguishers. Remember fire doesn't wait ... get the facts today!

C-O-TWO

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

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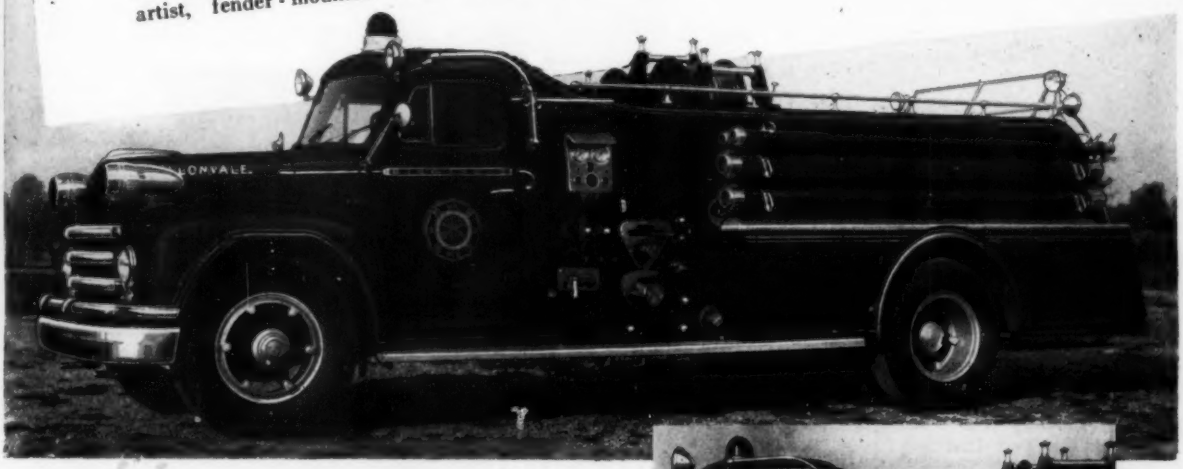
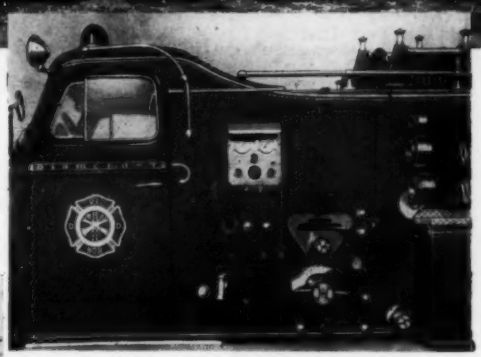
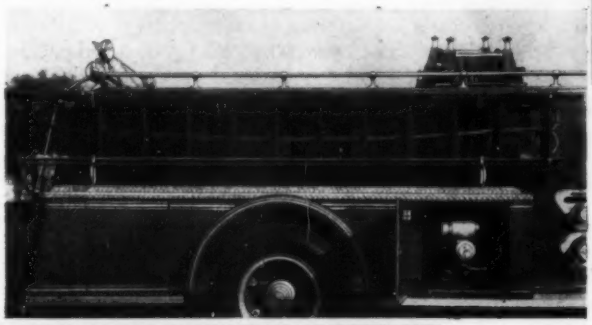


Streamlined compartment section (below), built flush with running board and recessed to chassis frame, provides depth sufficient to house portable electric generator in front as shown, portable pump in rear. Where required, sliding trays are installed for mounting these so that they can be removed to any strategic spot. There is storage space also for miscellaneous items. Flush doors have flanges on all sides for rigidity, close fit, and noise elimination. Waterproofing is insured by special Howe construction.





This truck has specially built, non-slip running boards. Bumper nozzles, supplied by power take-off pump, for fighting grass fires, are operated by remote control from cab. Note in cut above that controls are symmetrically arranged, clearly and concisely labeled. Automatic prime indicator, *exclusive with Howe*, is above pump gear shift. To prevent hose damage, reels have full swiveling horizontal and vertical rollers. All operating valves are ball type, finger tip controlled.

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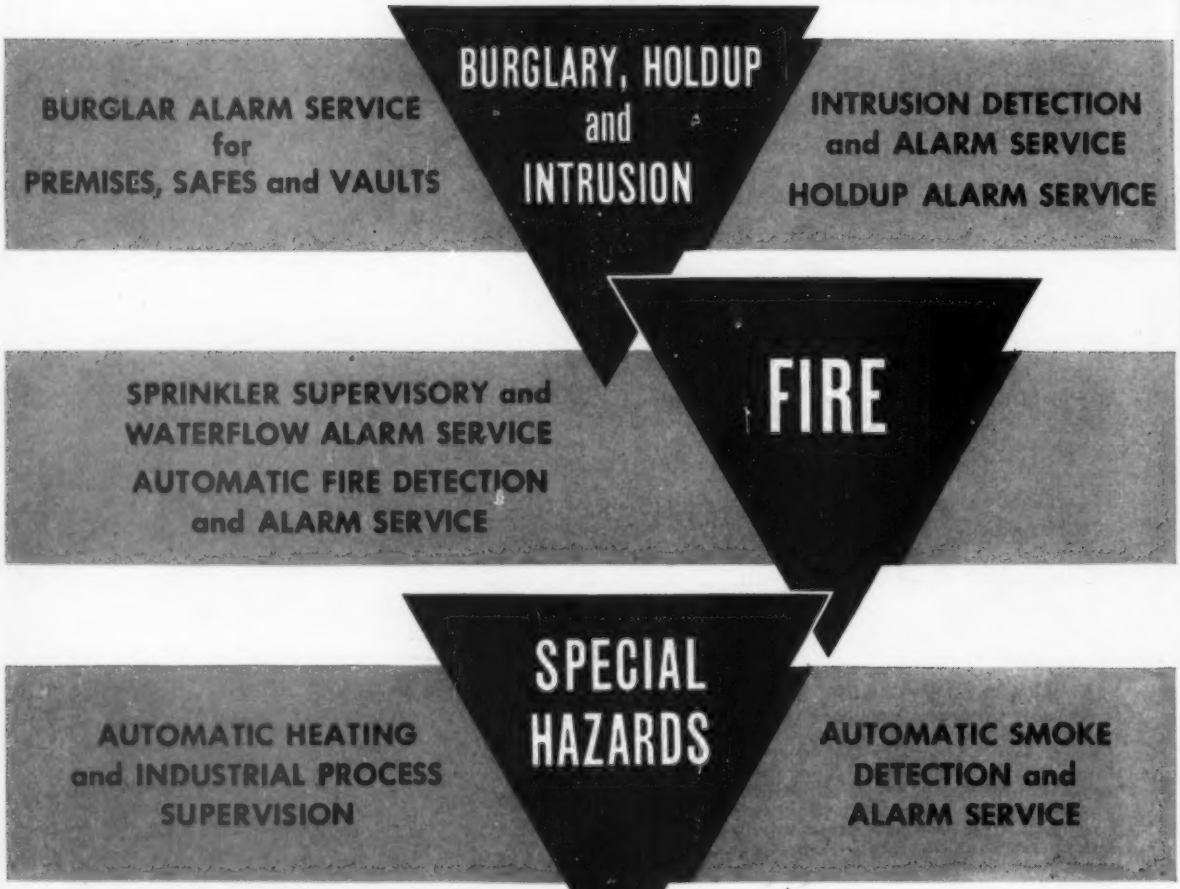
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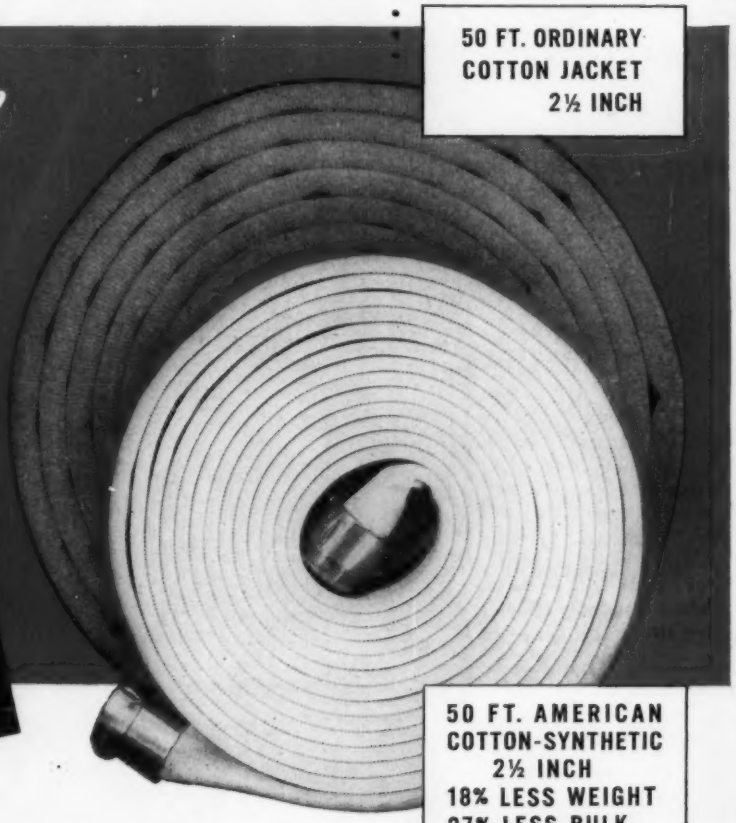

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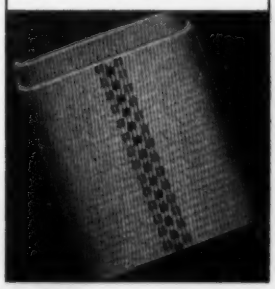

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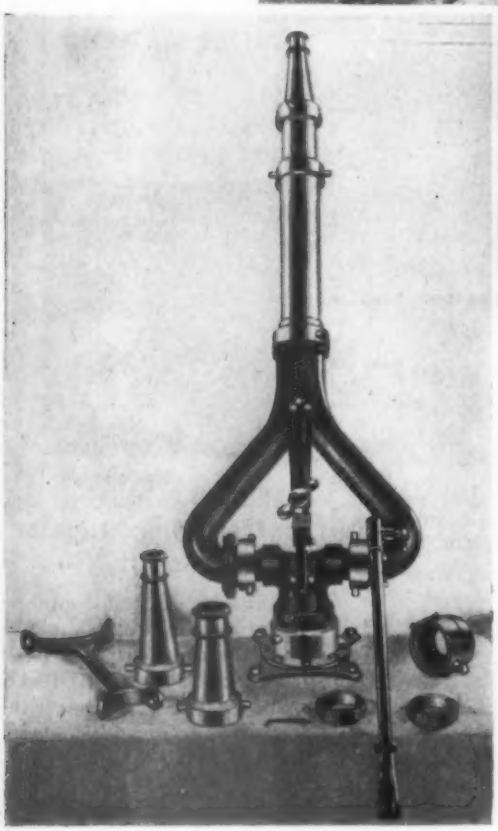

Photo shows streams using 1½ inch tip

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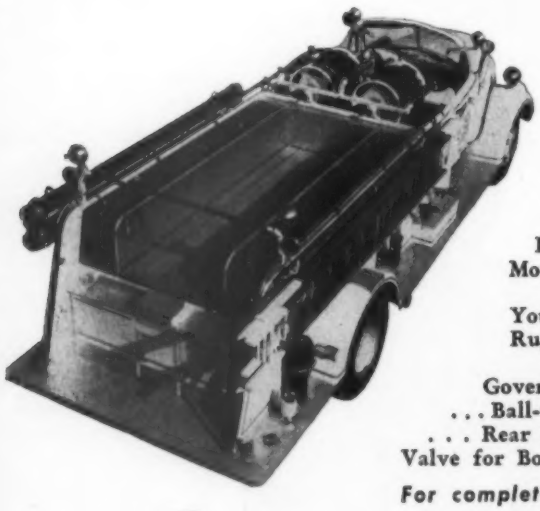

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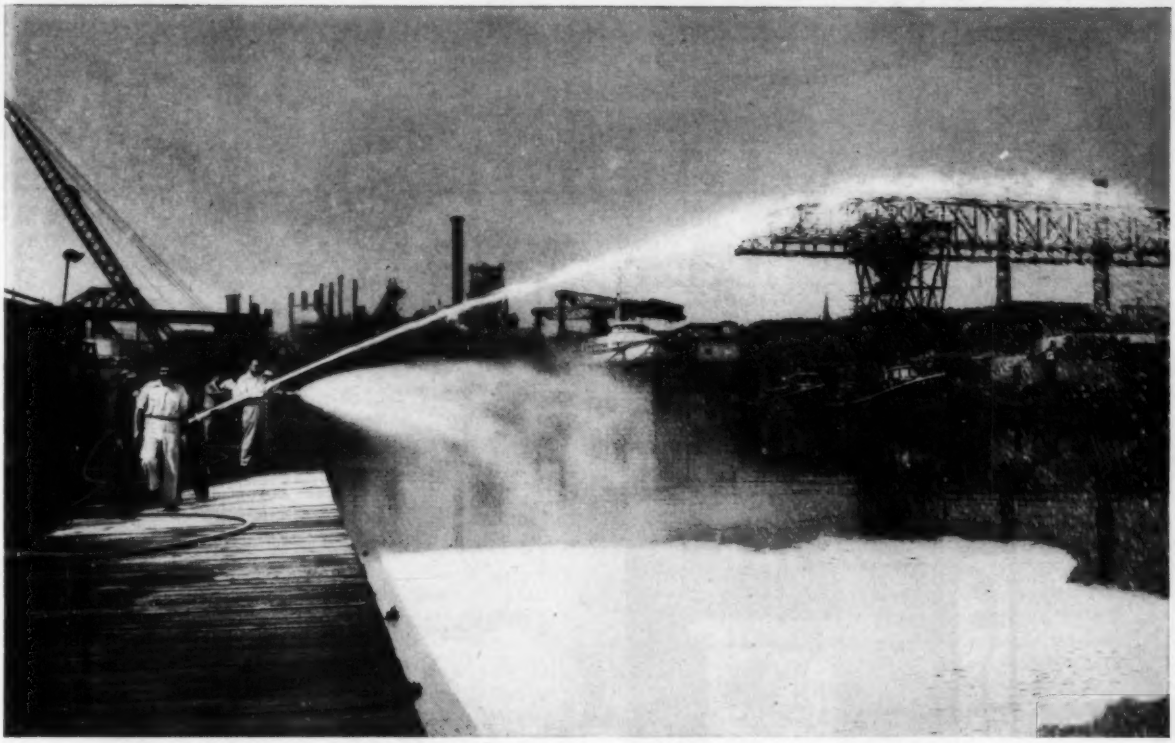

Two methods of discharging Rockwood FOAM include the solid stream (foreground) and the broader FogFOAM pattern. The nozzles used are described and illustrated below. Note the FOAM blanket on the surface of the water.

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Versatility is one of the big advantages Rockwood FogFOAM nozzles bring to waterfront fire-fighting. Depending on the type of nozzle equipment, you can discharge either a solid FOAM stream many feet in length, or a highly heat absorbent FogFOAM pattern for shorter distances.

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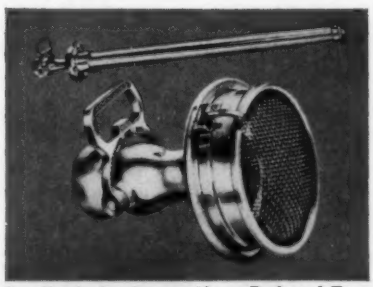

Two Nozzle Attachments. Above, Rockwood Type FFF FogFOAM nozzle, equipped with long shaper, discharges a solid FOAM stream up to 45 feet distance. Below, with a FogFOAM screen, it discharges a pattern with a range of 30 feet. Suction draws FOAM liquid through a tube at nozzle base.

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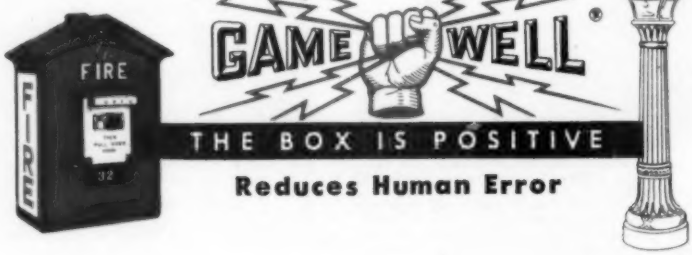


FIRE ENGINEERING

DECEMBER, 1953 VOL. 106, NO. 12

With the Editor

What Future for Fire Alarm Systems?

The fire service of this nation faces a new problem and an issue that should be resolved quickly and emphatically.

That is the possible elimination of its long-established and accepted municipal fire alarm system, and its replacement by the public telephone.

This radical venture, conceived about three years ago in England, ostensibly as a stopgap to the false alarm evil and as an "economy measure," and instituted by the London Common Council over the heads of the British Fire Service, has bewitched and beclouded certain public administration officials and groups in this country who now propose its adoption here. In this, unfortunately, they are aided by a small number of signalmen and fire chiefs.

Advocates of this drastic revision ignore completely the fact that the great majority of the British Fire Service strongly opposes the move, and that, in London, the change has proved of doubtful value both in reduction of false alarms, and an economy in fire alarm communications.

This nation has always prided itself on the speed and efficiency of its fire alarm communications systems. In its cities, and most of its larger towns and villages, the fire alarm box is a known and accepted institution, recognized by public and fire service alike as the instrument that will bring the fire department in time of emergency faster, and with less chance of error, than any other system of communication extant.

The corner fire alarm box is generally admitted to be the most efficient instrument for calling firemen. Its effectiveness is multiplied by the number of people, and amount of property contiguous to each box, 24 hours-a-day.

The telephone is likewise an accepted medium for summoning firemen. Unlike the street signal box (unless installed in kiosks on the street), it is promptly available to only those within the property in which it is installed, and frequently only a part of the day and night. It has its advantages, and its disadvantages, which will be found summarized in the article about the fire alarm box vs. the telephone in this issue.

Let us hasten to emphasize that we do not intend to belittle the telephone as a useful communications instrument and a powerful adjunct to the municipal fire alarm system. On the contrary. Let us agree also, there are and always will be districts and areas where valuable as is the public street alarm system, it would be impractical and uneconomical to attempt to install and maintain such a system in such locations.

As we see it, the question of the physical replacement of the street fire alarm box by the public telephone is not altogether the main issue. The *real issue is whether municipalities would rather possess and maintain their own fire communications systems,* or whether they should farm them out to outside interests *which will not accept full responsibility for failure of the system or for errors in its operation,* and which will always be under outside direction according to the contractural stipulations. In a word, the fire chief and the signal engineer must deal with persons and interests (legal, financial and otherwise), *outside their own fire departments;* with persons who, cooperative as they may desire to be, do not speak the firefighter's language, do not and cannot have the department's interests as closely at heart as they do their own corporation's, and who cannot *guarantee* uninterrupted service because of the right of public utility employees to strike.

Let's be frank about it: the fire alarm communications systems of too many of our municipalities *are* outworn, outmoded and due for major overhaul. They have been permitted to deteriorate, against the pleas of conscientious fire chiefs and signalmen. They have reached the point, many of them, where they are like the "one hoss shay," ready to fall apart completely.

It doesn't matter who's to blame. The condition exists. But before junking a system that has performed well for the greater part of a century, or for a system that is as yet untried, it would be well to weigh all the facts, not in the light of English, Canadian or other isolated experiences, but measured by the standards and the needs of our own fire service.

In an effort to help fire chiefs, signalmen, and their superiors in municipal government to do just that, we publish in this issue the interesting, factual story of what has recently transpired in New Orleans. Read and heed its moral.

Fred Shepard

Shall the Telephone Replace Municipal Signal Systems?

Most Fire Officers and Signalmen Say No. This Report on the Recent New Orleans Survey May Help Clarify the Question.

By ROI B. WOOLLEY

Editor's Note: **This critical study is devoted almost entirely to the recent survey and report, with recommendations, made by the firm of Fromherz Engineers for the City of New Orleans. The actual survey was made by A. C. Hutson, Consulting Fire Protection Engineer, well known to the fire service as the former assistant chief engineer of the National Board of Fire Underwriters. The editors are grateful for permission to quote at length from this survey and report.**

The author of the following article, Chief Roi Woolley, is chairman of the Committee on Communications of the International Association of Fire Chiefs, and Technical Consultant of the New England Association of Fire Chiefs.

As pointed out in the editorial in this issue, a serious problem confronts the fire service: whether or not to substitute the commercial telephone for the conventional municipal fire alarm system. This may be news to some fire officers, but it is not to those who have had the matter of such substitution raised by their local governments.

The question of fire alarm box vs. public telephone as an instrument for transmitting alarms of fire has been raised many times during the past fifty years. Over 20 years ago the International Association of Fire Chiefs passed a resolution urging greater distribution and use of municipal fire alarm boxes and emphasizing the drawbacks of the telephone. Since then, nearly every fire service association and organization has followed suit. Even the National Board of Fire Underwriters has recorded itself as being in favor of the municipal signal system as compared with the public or private telephone system for prompt, accurate transmission of fire alarms.

Notwithstanding this background, the question has again bobbed up, this time with emphasis on two factors. First, the substitution has been accepted in at least two cities in this country, one of them Miami. It has also been adopted by several Canadian municipalities, and it is being openly espoused by municipal administration authorities in the name of "economy" and as a palliative for the so-called "false alarm evil." Secondly, and this fact may also be news to many fire officers, the nation's telephone interests very definitely have set their sights on the fire servce as a market for their communications—not only electronic, but wired communications, and whereas not so long ago a number of such companies declared flatly they weren't interested in telephone fire alarm systems, these firms are today actively soliciting this business. The most notable example is the New England Telephone Company in one Massachusetts city which only about a year ago issued a card to all its customers urging them to use the fire alarm box rather than the telephone to call the fire department—and which has recently submitted a proposal to that city to take over its entire fire alarm system.

Meantime the city of Chicago has been solicited; so, has Cincinnati, Columbus, O., Little Rock, Ark., and numerous others. In some of these cities the local press has raised the question "why not change?" And, in a few cases, has openly advocated the switch. In others, such as Little Rock, the local government, after gathering all the facts, has turned thumbs down on the proposals. In still others, the struggle is being waged pro and con with the signal engineers and fire officers generally standing united for the municipally owned and controlled fire alarm system, and certain civic authorities advocating the change.

Thrown into the arguments are conflicting statements and contradictory evidence from different sources. But the root of the evidence appears to be grounded in the information reported from England and Canada, and the statements of a small number of fire alarm superintendents and fire chiefs who have been converted to the change.

So conflicting have been the claims and counter-claims that numerous readers of FIRE ENGINEERING have written this Journal for substantiation or clarification of some of the arguments.

The editors have continually recognized and endorsed this country's municipal fire alarm systems. At the same time, the importance of the telephone as an adjunct to the municipal system and for use where for any reason the fire alarm boxes are inadvisable, has been duly recognized. No one doubts that both systems have their place. Most proponents of street telephone alarm boxes, or kiosks, admit that municipal signal systems are advisable in high value districts, and for protecting "special risks." Most of them, also, will agree that there have been delayed alarms and slowed fire department response because of failure of one kind or another in telephone alarm transmission. Most of them, too, have only the haziest idea of the comparative costs to buy, install and maintain the two types of systems.

On the other hand, it must be admitted that some advocates of the orthodox municipal fire alarm system have been guilty of some negligence and procrastination when it came to rehabilitating their fire alarm systems. Too many have permitted their systems to fall into a point of decay where today repairs call for a major replacement operation, despite warnings of the National Board of Fire Underwriters, the various rating boards and other experts that their systems were obsolete and a hazard.

It may be true that some city governments have persistently turned down the requests and recommendations of their fire chiefs and heads of fire alarm bureaus to bring their fire communications into line with other departmental improvements, but viewed dispassionately, the fact remains that the fire service generally has failed to "sell" the importance of modern, scientific fire alarm communications to local government, and citizens and taxpayers.

One of the larger cities which has found itself, wittingly or otherwise, in this predicament is New Orleans, La. It's 53-year-old fire alarm system has had little money spent on it, notwithstanding the repeated warnings of the underwriters and insurance rating boards that its antiquity posed very real threats to the city's fire safety by jeopardizing efficient fire department response.

Late in 1952, matters reached a critical point where the city was faced with a possible down-grading because of this communications weakness. At about the same time, the proposal was advanced by the telephone company to replace the old municipal system with an entire new layout, using street public telephones.

Faced with a hiatus, the New Orleans Commission Council adopted a motion authorizing the Hon. Bernard J. McCloskey, Commission of Public Safety, to employ a firm of outstanding engineers to prepare a survey of the needs

for an adequate fire alarm system for the city. The survey was contracted for last February 23, and the engineers engaged one of the nation's outstanding authorities in fire alarm communications to conduct the study and report recommendations. This person was A. C. Hutson, formerly assistant chief engineer of the National Board of Fire Underwriters.

On Oct. 7, last, the firm of Fromherz Engineers submitted Mr. Hutson's survey covering the need and requirements for "an Adequate Fire Alarm System" for the City of New Orleans.

The editors of FIRE ENGINEERING are privileged to quote at length from this Survey in the hope that its procedure and findings will serve as a helpful guide for members of the fire service and municipal administrations who are confronted with much the same problem as faces New Orleans, and other American municipalities.

Fire Alarm System of Ancient Vintage

The present fire alarm headquarters of the New Orleans Fire Department is located on the third floor of the City Hall Annex. The building frame is fireproof, but the interior contains much combustible material. Internal hazards, such as open flame burners in the battery room, are called critical.

The headquarters fire alarm equipment was built and installed by Gamewell in 1900; the terminal board, battery charging board, repeater register and other equipment are mounted in wooden cabinets or on pedestals. The only new instrument is a transmitter, installed in 1951.

At least two fire stations are presently not connected to the fire alarm system and some, or all, of the alarm instruments in at least six other stations are not in operation. Other stations have the conventional tapper (joker bell) and large gong. There are 392 alarm boxes of the Gamewell succession type, most of which have key under glass guard. Of there, 52 are in the congested value district.

Alarms are transmitted from the boxes to alarm headquarters over 19 normally closed box circuits. Alarms from headquarters are transmitted to fire stations over six primary circuits and eight independent secondary alarm gong circuits. Circuits are aerial, open wire construction. Each box circuit covers an excessive area and there is reported very little underground construction.

The suburb of Algiers is covered by two box circuits included in the above, on which there are 24 boxes. These circuits, are connected to fire alarm headquarters by leased wires of the Southern Bell Telephone and Telegraph Company. Alarms are transmitted to the fire stations in Algiers from headquarters by the same type leased wires.

The same telephone company provides and maintains all of the telephone equipment for the fire alarm system. This service consists of six trunks for general purposes and four for reporting fires but which cannot be used for outgoing calls, and a two position 80-circuit PBX board in the fire alarm operating room. There are also three automatic stations, one to police headquarters, one to the Algiers Naval Station and one to the radio room of the New Orleans Public Service, Inc. Two special unlisted lines, not connected to the switchboard, are used by the Fire Alarm Superintendent and Office of the Fire Chief. Individual lines are provided for each fire station, chief operator's desk, the office of the Fire Chief, Army and Navy Bases and two housing developments. There is also an indicating board which shows the apparatus in each fire station and the various changes in location that might occur.

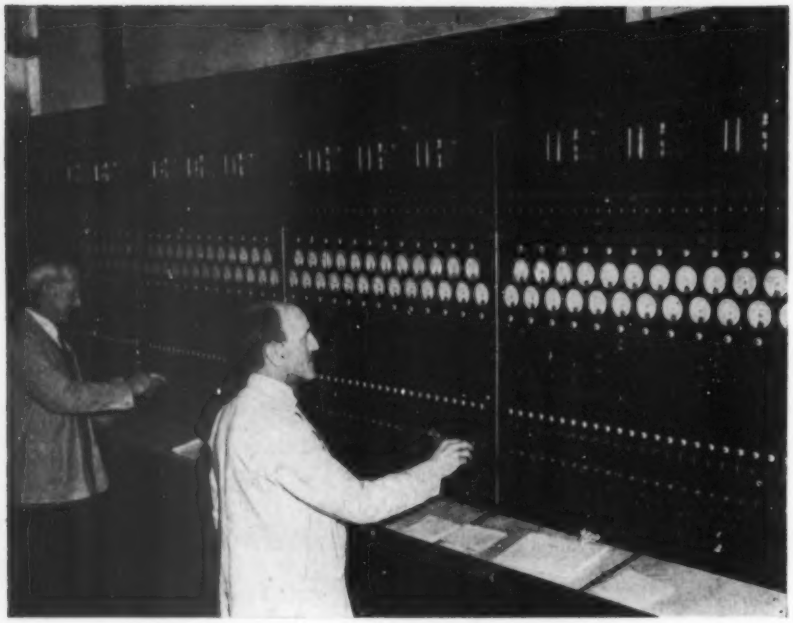
The new three-way RCA radio system installed in 1953, is operated from fire alarm headquarters through two 60-watt high frequency transmitters, one a standby unit. Both of the transmitters are served by leased telephone company lines from fire headquarters. Two consoles containing speaker microphone and cross-over equipment are located at fire headquarters. One is used as a standby. There is also a transmitting and receiving console in the chief's office with leased telephone lines direct to the transmitters.

Each fire station is equipped with a receiving set, making a total of 45. Each piece of apparatus, and all automobiles of the chiefs, 75 in number, are equipped with transmitting and receiving sets which permit apparatus-to-apparatus communications up to two miles. There are 16 walkie-talkie sets, two in the cars of each chief. Maintenance of the radio is by police department with one man detailed from the fire department. Sources of power are the New Orleans Public Service, Inc., and there is a standby automatic generator set (gasoline).

The September, 1928, report of the National Board of Fire Underwriters on the New Orleans Fire Alarm System listed 21 persons in the system's organization; also that $67,000 was expended on the system for the year 1927, which represents a per capita expenditure of about 15 cents. There are 22 persons in the same organization on the payroll in 1953 and the cost of operating the system for the year 1952 amounted to $62,650, which, based on a population of 600,000 amounts to approximately 10 cents per capita of population.

The conclusions of the September,

This cartoon, reproduced from the pages of our esteemed British contemporary "Fire," needs no caption.



Operating room of typical fire alarm telegraph headquarters.

1928, report of the Board included this statement: "For the past decade New Orleans has depended for its fire alarm protection upon a system which was, even at that time, badly outgrown and containing many features of unreliability."

The June, 1948, report of the same body said this: "The New Orleans Fire Alarm System has been for many years, as reported in the 1928 and other reports of the National Board of Fire Underwriters, practically obsolete, very inadequate and seriously unreliable. Practically no major improvements have been made on the system which has now reached the condition where adequate fire alarm service necessitates the installation of a complete new system."

Requirements and Standards for a Fire Alarm System

It has been well said that the fire alarm system is the nerve center of the fire service. Fire control and suppression is impossible without some adequate means of summoning the fire forces.

The communications standards have been established for the nation's fire service by the National Board of Fire Underwriters and the National Fire Protection Association, with concurrence by the International Association of Fire Chiefs and the International Municipal Signal Association. These standards and regulations are precisely set forth in NBFU Pamphlet No. 73, and the Standard Schedule for Grading Cities and Towns of the United States.

In making surveys, preparing definite plans and specifications for, and installing fire alarms systems, these standards (Pamphlet 73) must be used as design criteria. In preparing the survey for an adequate fire alarm system for the City of New Orleans, these standards were established as the norm for the studies made and conclusions arrived at.

A further word about the requirements. The fundamental purpose of a fire alarm system is to provide a means for notifying the fire department of the location of a fire. Obviously, the means of notification should be as near as possible to the place where the fire originates. And the notification should be transmitted to the fire department headquarters in the shortest possible time in order that fire forces may be set in motion toward the fire with least delay. It is also essential that the means of originating and dispatching the fire alarm should be available to any person discovering the fire.

Any study of fire alarm communications should take into consideration the fact that the greatest loss of life and property by fire is usually found in the congested value or business district. Various hazards may exist likewise in other places such as seaports where high values abound. These high hazard areas, therefore should receive the maximum means for reporting fires from such districts.

Residential, and some commercial areas in such locations, not involving the same life and property loss potentials, need not be so extensively covered in scope by the fire alarm system as congested sections but the areas nevertheless should be thoroughly protected by fire alarm system. Every residential and commerical district has its schools, churches and other properties which must be so protected.

It should also be remembered that many structures in the congested, high value districts are occupied only a portion of the day time, in many cases for only one-quarter of the week, and not at all on weekends or holidays. Further, in these areas during daytime, structures are occupied by large numbers of people and special consideration of protection against fire should be given them because of the height of the buildings, the hazard of the contents and crowding of the exits that will most likely occur in any emergency. Finally, present in such areas is the problem of street congestion which can retard response.

All of these factors, and more, should be included in any study of fire service communications. They apply directly to the question before us. They were included in the New Orleans study.

The Telephone Company's Proposal

On March 17, 1953, a letter was addressed to the Southern Bell Telephone and Telegraph Company, New Orleans, advising that various plans were under study to provide an adequate fire alarm system for the city. One plan involved the possible use of equipment installed, maintained and operated by the telephone company on an annual rental basis. The company was requested to work with the firm of engineers to develop this scheme. After numerous conferences, a proposal was submitted to the city, dated August 26, 1953. This was known as the "Proposed Fire Reporting, Alerting and Dispatching Systems for the City of New Orleans."

It is manifestly impossible to quote this entire proposal. However, the main factors may be summarized as follows:

The company proposed to furnish, install and maintain all facilities required for the purpose of reporting fires and to furnish, install and maintain equipment required in the alerting and dispatching.

Fire reporting telephones will be provided on a voice reporting basis, i.e.: the person reporting a fire will be able to talk with the attendant at fire alarm headquarters and can give details of location, extent and nature of fire, etc.

The dispatching system will consist of audible and visual facilities to permit fire alarm headquarters to select the fire station or stations involved. It will provide an audible alert by means of a bell located in each fire house, as well as teletypewriter machine to provide a written record showing time of report, location, etc.

The proposal assumed that since the fire department now has radio equipment to provide the voice dispatching facilities, these would continue to be used, but the company offered to negotiate the purchase of this radio equipment and in turn "lease the private mobile radio system" to the city on a monthly rental basis.

The fire reporting system will consist of special outdoor telephone sets mounted on steel pedestals furnished by the company, "or on available posts, poles or buildings, as specified." Telephones and a portion of the support will be painted red with a white stripe above and below the red, by the company. The city would provide "any identifying or illuminating lights" at telephone locations, as well as traffic type signs or other means of instructing the public in the use of the fire reporting telephones.

The proposal set forth the wiring "through the cable distribution system used in providing regular exchange telephone service." All wires used in the system will be used exclusively for fire reporting purposes and will be identified as "special emergency circuits" in the central offices. Wires generally will be underground throughout the business district; in most residential areas cable will go overhead. Cables to connect to the nearest permanent telephone central office where special equipment will be installed. The reporting telephones and circuits between telephones and central office, will be arranged for continuous

test with an alarm at the central office to indicate failure.

Details were advanced for grouping equipment in the company central offices. Briefly, fire reporting circuits will be connected in groups of 100 to line equipment in the central office "which will select an idle talking and signaling path to complementary equipment at fire alarm headquarters." Four talking channels will be provided to the latter for each 100 reporting telephones. At fire headquarters, line identifier equipment receives the incoming signal from the reporting station and extends the call to a manual switchboard where a visual indication of the identity of each calling telephone is provided with a jack for answering. "In the event that all talking channels in any group are in use at the time, a call is placed from one of the reporting stations, the equipment is arranged to provide an audible and visual signal at the switchboard to denote the identity of the calling station and will automatically select the first available talking channel."

The proposal calls for a specially designed switchboard, and a lamp indicator for each fire reporting station. When the receiver is lifted at any one of these stations, an audible signal will sound at the board and a lamp identifying the station will light.

Three different proposals were submitted. Plan I is designed "to provide maximum coverage for the entire city with approximately 4,000 fire reporting telephones. Of these it is estimated that 524 will be mounted on special pedestals and 400 will be mounted on specially provided telephone poles, the remainder to be mounted on available posts, poles or buildings as specified." Three manual switchboard sections will be provided, equipped initially with 4,000 fire reporting station line terminators and 10 central office trunk terminations.

Plan II proposes a coverage arrangement for the same area as Plan I only. This plan would consist of 260 fire reporting telephones but with less density of fire reporting telephones in the residential areas. A total of 2,700 fire reporting stations are proposed under this plan. Of these it is estimated 436 will be mounted on separate pedestals and 268 on specially provided telephone poles, the remainder to be mounted on available posts, poles or buildings. Two manual switchboard sections will be provided and equipped initially with 2,700 fire reporting station line terminations and 10 central office trunk terminations.

Plan III proposes an arrangement to cover the high value area of the city only. The plan would consist of 260 fire reporting telephones mounted on special pedestals. One manual switchboard equipped initially with 300 fire reporting station line terminations and 10 central office trunk terminations will be provided.

"All systems covered in the three proposals may be extended to meet increasing service needs; all will be equally reliable and will have similar automatic features to protect the continuity of service."

The proposal included these conditions:

"It is proposed to furnish the service described under the three plans on a 15-year contract basis. If all or a portion of this service is discontinued prior to the expiration of the initial contract period, a termination charge will apply. This charge is determined by applying to the total basic termination charge stated below, the percentage which the unexpired portion of the fifteen year term, calculated to the nearest month, bears to the full fifteen year term." If only a portion of the service is discontinued prior to the expiration of the initial contract period, the termination charge will apply only to any portion of the service discontinued after the expiration of the initial contract period."

The approximate rates and charges applicable to the three plans which are based on fire alarm headquarters being located at the intersection of No. Jefferson Davis Parkway and Bienville Avenue would be as follows:

	Annual Charge	Basic Termination Charge
Plan I	$685,000	$950,000
Plan II	475,000	675,000
Plan III	53,000	116,000

The proposal also contemplated providing alerting and dispatching facilities to include a loud ringing bell in each of 41 fire stations, to be controlled by a master control station at fire alarm headquarters. Stations may be selected, or alerted, simultaneously.

The dispatching system will include a receiving-only-teletypewriter in each fire station and sending-teletypewriter in fire alarm headquarters.

The rates and charges applicable to the alerting and dispatching systems would be as follows:

a. Annual charge ..... $20,458.50.
b. Installation charge (non-recurring) ..... $1,665.00.

The telephone company agrees to maintain all service and facilities in the proposals "on a preferred maintenance basis." All channel facilities and fire reporting telephones involved will be maintained under continuous test and any troubles developing in these facilities will bring in an audible and visual alarm in the telephone company central office, indicating the channel or channels in trouble and will permit prompt clearance of any troubles.

Each fire reporting station will be examined physically and tested monthly by a representative of the telephone company. Reports of these tests will be available to the fire department.

The telephone company "feels that the services and facilities covered by this proposal can be provided in time to meet the requirement of the city, i.e.: two years after execution of the contract. The proposal also pointed out that the services and facilities covered by the proposal "are subject at all times to lawful rates and regulations."

Requirements for an Adequate Municipal Fire Alarm System for the City

The survey report of the engineers went at length into the details of a new municipal fire alarm system, based on the estimated requirements, present and future.

It took recognition of the fact that in 1952 there were 5,409 alarms from all sources, of which 1072 were bell alarms, 183 still alarms, 4,136 telephone alarms, 9 general alarms and 9 repeated general alarms.

Based upon the requirements of NBFU Pamphlet 73, since there were 5,409 fire alarms in 1952 it is necessary to provide a Type A (manual) fire alarm system for the city. This is a type where alarms from street boxes require an operator to check their receipt and to re-transmit all alarms over two classes of alarm circuits to fire stations.

Alarms, the report stated, should be received at fire alarm headquarters from street boxes over circuits of the closed metallic type. From headquarters there should be two means of transmitting alarms to fire stations, one to be a metallic circuit over which a coded signal is sent to be received on a sounding device and on a register, both located in the fire station. A second method of transmitting alarms should be by use of the three-way radio system installed on department apparatus and now being used for this purpose.

As a second means of receiving and third way of retransmitting an alarm, the commercial telephone system containing at least 10 trunk lines serving the two position PBX board should be available (this equipment presently exists at headquarters).

The city's fire alarm system is made up of the following:

1. Distribution of boxes.
2. Circuits from boxes to fire alarm headquarters.
3. Circuits from fire alarm headquarters to fire stations.
4. Fire alarm headquarters, which includes:
   (a) The fire alarm headquarters building.
   (b) The equipment housed in the building.
5. The equipment housed in fire stations.

Space does not permit giving all the specifications for the municipal fire alarm system recommended in the report. Certain factors, however, should be high-pointed. Thus, it was said, all boxes should be available from the main entrance of any building in the congested value district and it should not be necessary to travel more than one block (300 ft.) to reach a box. Therefore it will be necessary to place a box at each street intersection in the congested value district.

In accordance also with N.B.F.U. Pamphlet No. 73, the distance traversed in the residential area should not exceed one block (or 500 ft.). The ideal spacing in New Orleans, it was said, can be obtained by placing a box at each second intersection along every street. On this basis 3,000 boxes are needed to cover the residential part of the city east of the Mississippi River. All buildings would be within 400 ft. of a box.

Provision also should be made for boxes "just outside the main entrance of asylums, schools, convents, hospitals, hotels, sanatoriums that are in excess of 300 ft. from regular boxes."

It was estimated that the suburb of Algiers will require 300 boxes under the 800 ft. spacing.

The total number of boxes needed to conform with an 800 ft. spacing is 4,000. If this ideal would prove too costly, an alternate spacing was suggested, with a box every third intersection in the residential areas, or 1,200-ft. spacing. This would require 2,000 boxes in the residential areas east of the River and 200 in Algiers. To this must be added the provision for 260 boxes in the congested value district, giving a total number of 3,000 boxes to conform to this proposal, with a 1,200-ft. spacing.

The type of box, box circuits, cable, ets., to be used in the municipal system was specified as adhering to N.B.F.U. Pamphlet No. 73. It is unnecessary to include those engineering details here. A complete new fire alarm headquarters and the equipment to be housed therein was included in the recommendations. The building calls for one-story, fireproof construction, so located as to be unexposed for a distance of at least 150 ft. outside the conflagration zone, and used for no other purpose than that relating to fire alarm system. Lighting, air conditioning, acoustical insulation, and other details were included in the recommendations. The location suggested is the neutral ground near North Jefferson Davis Boulevard and Bienville Street. Such a structure should cover an area of 3,600 sq. ft. and cost $75,600.

Estimated Costs of an Adequate Municipal Fire Alarm System

The estimated construction cost, annual operating cost, and annual maintenance cost of an adequate fire alarm system for the city was included in the survey as follows:

1. Estimated construction cost of an adequate fire alarm system using spacing of boxes at every other intersection in the residential areas, which shall include the following: Approximately 4,000 alarm boxes; 90 box circuits; 10 underground alarm circuits from headquarters to fire stations; headquarters building; equipment housed in headquarters building and equipment housed in fire stations, including contingency allowance, engineers' fee, cost of financing and attorney's fees ..... $2,700,000.

2. Estimated cost of a fire alarm system using spacing of boxes at every third intersection in the residential areas which shall include the following: Approximately 3,000 alarm boxes; 64 box circuits; 10 underground alarm circuits from headquarters to fire stations; headquarters building; equipment in headquarters building and equipment in fire stations, including contingency allowance, engineer's fee, cost of financing and attorney's fees ..... $2,365,000.

3. Estimated annual cost of operating an adequate fire alarm headquarters for a fire alarm system ..... $48,000.

4. Estimated annual cost of maintaining an adequate fire alarm system without provision for indicating lights at boxes for approximately 4,000 boxes ..... $49,000.

5. Estimated annual cost of maintaining a fire alarm system without provision for indicating lights at boxes for approximately 3,000 boxes .... $44,000.

The difference between the 4,000 box system and the 3,000 box system amounts to $335,000 or on a basis of cost-per-box of $675 for the 4,000 box plan and $788 for the 3,000 box system.

In comparing the two systems discussed, such details as underground cable, aerial cable, headquarters building, high value district installation, high value district cable, fire station equipment, underground ducts, manholes, cleaning ducts and tree trimming, remain constant. Items that varied are overhead wire, number of alarm boxes, headquarters equipment and number of poles.

The report stated that "considering the coverage of the two systems, and the protection afforded for life and property by the 4,000 box system over the 3,000 box system, the sum (saving) of $335,000 cannot be justified. The fact remains that a 3,000 box system is a sub-standard one." And the report listed these reasons-why:

1. The basis of the survey is that all of the taxpayers of the city of New Orleans should receive equal protection against loss of life and property.

2. Experience has proven that if only a part of a fire alarm system is installed, there is very little probability that it will be extended in future years to provide an adequate fire alarm system.

The sum of $48,000 is allowed as an estimated annual cost of operating fire alarm headquarters. This cost remains constant regardless of the type of system, its extent, or number of boxes.

The difference in the annual cost of maintaining an adequate fire alarm system of 4,000 boxes against a system containing 3,000 boxes amounts to only $5,000. The increased protection provided by a 4,000 box system over one with 3,000 boxes is a large consideration when viewed in the light of a relatively nominal increase in annual maintenance charges.

Comparative Costs Between the Telephone and Municipal Systems

The fact that several cities of the United States were contemplating or had actually contracted with the telephone company of their city for fire alarm service on a yearly rental basis made it essential that a similar study be undertaken for New Orleans according to the survey-report.

Such a system would consist of the installation of telephone boxes on street corners available to the public for fire service only.* The telephone boxes would connect through the company's wires to automatic equipment in its central offices. The alarms would then be transmitted to fire alarm headquarters over company wires. The city's operators in fire alarm headquarters would retransmit alarms, over the company's specially designated wires to the fire stations.

The basis of comparison between the telephone and the municipal fire alarm box systems is that which provides for 4,000 boxes.

The report states that the 4,000 box plan of the Southern Bell Telephone and Telegraph Company can be considered to provide an adequate fire alarm system for the city comparable to the adequate municipal fire alarm system as recommended except that a fire alarm headquarters building must be provided by the city.

In order that a basis of comparison between the telephone company's plan and the city-owned and operated fire alarm system of 4,000 boxes can be established, it has been assumed that the $2,700,000 construction expenditure would be amortized at three per cent interest over a fifteen year term. Fifteen years was selected as the term because the Telephone Company's proposal is based upon a 15 year contract.

The average annual payment to amortize $2,700,000.00 in 15 years at three per cent interest amounts to $226,179. To this must be added annually $48,000 for fire alarm headquarters operations and $49,000 for fire alarm maintenance. The total annual expenditure for a city-owned and operated system would be $323,179. The Southern Bell Telephone and Telegraph Company proposes an annual charge of $685,000. It further proposes an annual charge of $20,458.50 for alerting and dispatching service. To these figures must be added $48,000 annually to operate fire alarm headquarters. The total annual expenditure under the telephone company's proposal therefore would amount to $753,458.50.

The survey makes this statement: "The Telephone Company's proposal is not to the best interest of the City when it is considered that an annual expenditure of $753,458.50 would be required as against the sum of $226,179.00 for a City-owned adequate Fire Alarm System. At the end of fifteen (15) years the City would have paid the Southern Bell Telephone and Telegraph Company more than $11,000,000.00 for a four thousand (4,000) Box System and would own no portion of the Fire Alarm System except the Headquarters Building. For a two thousand seven hundred (2,700) Box system the total payment by the City to the Southern Bell Telephone and Telegraph Company would be more than $7,000,000.00 without securing ownership.

The Commercial Telephone as a Substitute for Municipal Fire Alarm System

One section of the survey-report of the engineers includes a critical analysis of the advantages and disadvantages and shortcomings of the commercial telephone as a means of reporting fire alarms in lieu of the conventional municipal fire alarm system. We quote:

"This is a controversial subject. Those who are economy-minded propose the elimination of the Fire Alarm System and substitution of the commercial telephone. On the other hand, this is opposed by those who are very apprehensive concerning the use of the telephone (as the sole instrument.—Ed.) for emergencies.

Since everyone relies greatly upon the telephone as an indispensable instrument of everyday life, it is only natural that it should be used to bring help in emergencies. Since this is true why should it be excluded in reporting a fire in favor of the (municipal) Fire Alarm System? Certainly, in all kinds of weather it is a more convenient method of securing help than any other way to accomplish the same purpose.**

There can be no argument but that the public will continue to use the commercial telephone to call the Fire Department; the experience of cities proves that even where complete Fire Alarm Systems exist, as high as forty (40%) per cent of the alarms are received by telephone.

The reasons why the commercial telephone is used for reporting fires are as follows:

(1) The absence of adequate fire alarm boxes available at all times.

(2) The telephone is close at hand, and in the upper floors of high buildings it is especially advantageous.

(3) If intelligently used by persons

(*Continued on page* 1138)

*This contrasts with London where the telephones are for general public use and for the most part located in kiosks.

**The telephone is generally not as reliable "in all kinds of weather" as the municipal fire alarm system.—Ed.

Tests Show Value of Dry Chemical Extinguishers in

Controlling Natural Gas Fires

The Ansul Chemical Company, of Marinette, Wis., last year ran a series of tests on the extinguishment of natural gas fires, at Longview, Tex. Data on these tests were recently made available for publication.

While the Company used only Ansul dry chemical extinguishers in these tests, the information compiled by their engineers will prove of interest to the industry as a whole as well as to fire fighters in all areas where natural gas is employed.—Editor.

THE tests, conducted on a 24-inch gas transmission line, with a large volume of gas available at a pressure of about 850 psi, were the largest and most comprehensive ever conducted with dry chemical in the natural gas industry.

In all, some 191 individual tests were made over eight working days.

A total of 930,563 cubic feet of gas was discharged.

The maximum rate of flow for one test was 2,610 cubic feet per second (equivalent to 225,504,000 cubic feet per day).

A total of 47,000 pounds of dry chemical was used during the eight days.

A total of 57,640 cubic feet of nitrogen was used to expel the dry chemical.

In all, 16 engineers and technicians from the gas pipeline company and eight from Ansul Chemical Company took part in the tests.

The tests were held because of the increasing importance of the transmission, storage and use of natural gas in large volumes and at relatively high pressures.

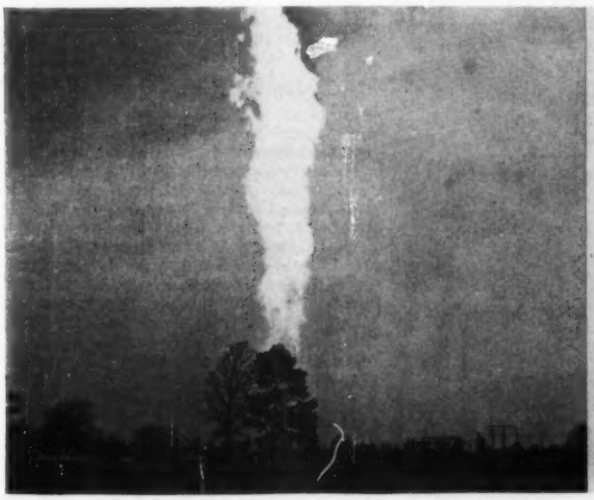
Throughout the entire process, at producing wells, in the transmission lines, and at the utilities or industries which store or use the gas at high pressures, all of the elements necessary for fire or explosion exist in close proximity. Under such conditions, fires occur despite the careful engineering and the safety precautions of producers, transmission line operators, and users.

There have been a number of fires involving high pressure natural gas but no consolidation of information regarding the methods of fighting them or the ability of any agent to extinguish them. One of the large gas transmission companies recognized the foregoing facts and with the cooperation of the Ansul Chemical Company made a series of tests. The objects of the tests, in addition to determining the suitability of dry chemical fire extinguishing equipment on typical natural gas fires, were: 1) To select the proper size and type equipment for compressor stations, and 2) To determine the limiting volumes and conditions under which burning gas can be extinguished by various size dry chemical units.

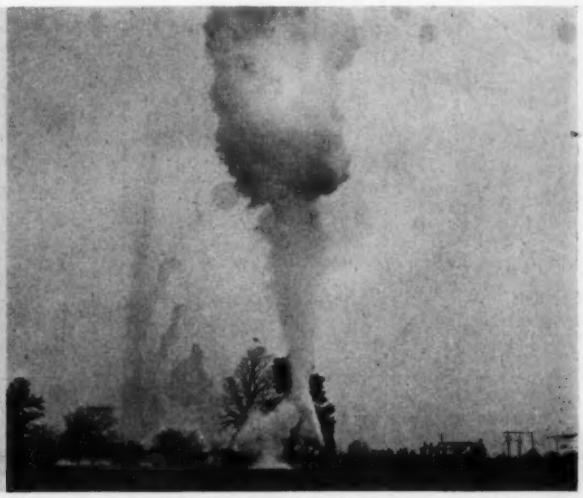
A site was provided for the tests at Longview, Texas. A 24-inch gas transmission line is located at this point with a large volume of gas available at a pressure of about 850 psi.

Approximately 500 feet of 6-inch pipe was laid from the large main to an open

Initial attack on impinging horizontal jet fire with two hose lines. Two additional hose lines were required for extinguishment.



Six-inch vertical jet fire just before attack with dry chemical streams. Gas flow 802 cubic feet per second. Flame height 172 feet.



Two dry chemical stream being used on vertical jet. Fire extinguished in 6.4 seconds.

RATE OF DRY CHEMICAL FLOW
REQUIRED TO EXTINGUISH
NON-IMPINGING TYPE NATURAL GAS FIRES

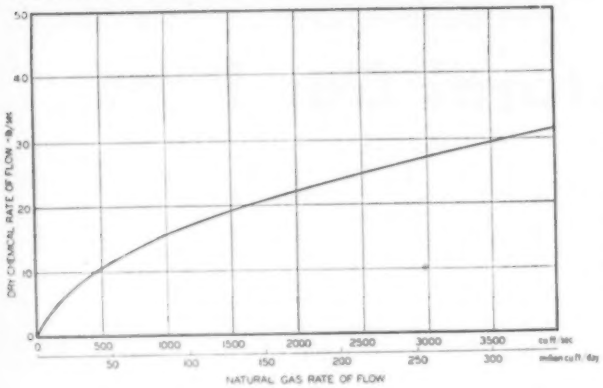


Chart No. 1

RATE OF DRY CHEMICAL FLOW
REQUIRED TO EXTINGUISH
IMPINGING TYPE NATURAL GAS FIRES

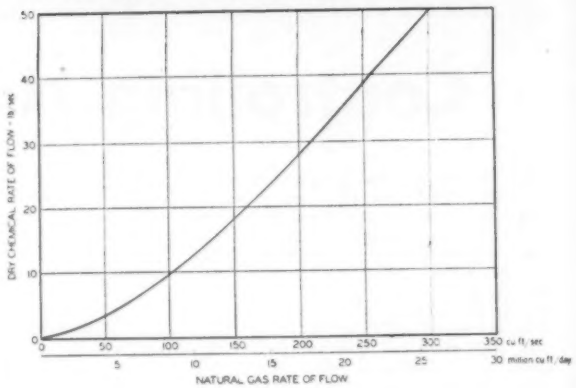


Chart No. 2

test site. The end of this pipe was anchored to a large block of concrete for safety. A meter run was provided in the 6-inch pipe where the flow of gas could be measured very accurately. Fittings were provided so that the gas could be discharged vertically or horizontally and so that the 6-inch line could be reduced to ½, 1, 1½, 2, or 4-inch pipe. A tap was provided near the end of the 6-inch pipe so that the pressure at this point could be recorded.

Equipment and Scope

The Company provided all of the dry chemical fire extinguishing equipment for the tests. Four pound, 20 lb. and 30 lb. hand extinguishers, 150 lb. and 300 lb. wheeled extinguishers, and 500 lb., 1000 lb., and 2000 lb. stationary extinguishers were furnished, together with hose, nozzles, adapters, carbon dioxide cartridges for the hand extinguishers, nitrogen cylinders for the large extinguishers, and a large supply of dry chemical.

The hand and wheeled extinguishers used in the tests had the following average flow rates:

Extinguisher Model	Dry Chemical Flow Rate lb. per sec.
20-B	2.0
30-B	2.0
150-B	2.5
350-A	3.0

Models 500-A, 1000-A, and 2000-B stationary extinguishers will supply one, two, and four 1-inch hose lines, respectively. Each of these 1-inch hose lines has a flow rate of 7.5 lb. of dry chemical per second.

In addition to evaluating the extinguishing equipment, part of the test program was to determine which types and sizes of fires could be attacked wearing normal work clothing and which required special protective equipment.

Types of Tests

The tests were set up to duplicate as closely as possible conditions that might be encountered in actual practice. These included the following:

(1) Vertical jet with 6-ft. stack on outlet.
(2) Low level vertical jet.
(3) Horizontal jet.
(4) Horizontal jet impinging against earthen bank.
(5) Horizontal jet impinging against steel plate.
(6) Downward impingement.
(7) Pit fire with gas discharging from slit in bottom of pipe.

Suitability of Dry Chemical

A general conclusion may be drawn from the test results; that dry chemical fire equipment is suitable for use on natural gas fires involving pressures up to 850 psi. Such fires may be at producing wells, in transmission lines, at gas utility plants, or at the plants of gas consumers.

It was anticipated before the tests that the impinging type fires would be more difficult to extinguish than the freely discharging or jet type fires. The test results confirm this and indicate the need for more and/or larger equipment to extinguish impinging fires.

The data for all of the tests were carefully reviewed and analyzed and it was found that they could be reduced to graphical form to express the relationship between the rate of flow of the natural gas and the rate of flow of dry chemical required to extinguish the fire. Chart No. 1 shows this relationship for the freely discharging non-impinging type fires and Chart No. 2 shows the ratio of impinging type fires.

It should be noted that the charts are based on the 1000 BTU gas used in the tests. Based on data from other tests by the Company, it can be reasonably assumed that the difficulty of extinguishment and amount of equipment needed will decrease or increase with flammable gases having a heat content below or above this figure. Known exceptions, however, are hydrogen or carbon monoxide which require special consideration.

An example of the use of one of the charts is as follows:

1000 BTU gas is escaping from a vertical jet at a rate of 750 cu. ft. per sec. (Approximately 66 million cu. ft. per day). A vertical line is drawn from 750 on the horizontal axis of Chart No. 1 to the curve. A horizontal line is then drawn from the point of intersection to the vertical axis where the dry chemical flow required for extinguishment is found to be 13.5 lb. per sec. Five Model 350-A wheeled extinguishers or two 1-inch lines from stationary extinguishers will provide the necessary rate of dry chemical flow. Chart No. 2 is used in the same way except that it shows the requirements of impinging type fires.

The foregoing charts and calculations are based on the equipment being used by trained, but not expert personnel.

Protective Clothing

With the protection afforded by the dry chemical stream the various types of non-impinging fires can be approached by fire fighters wearing ordinary work clothing. Wool clothing is recommended because it offers greater resistance to ignition than does cotton.

Where large impinging type fires are anticipated, protective clothing should be available. The equipment used by fire fighters in these tests consisted of bunker coats and safety helmets with ⅛ in. thick Plexiglass face shields. This protection permits close approach to very severe fires without danger to the men.

Gas Wells

The use of dry chemical fire extinguishment equipment on fires involving gas wells is obviously suggested by the successful handling of the natural gas fires which have been discussed. The limitations as to the size and type of fire which can be extinguished by a given amount of dry chemical equipment are clearly shown by the charts.

A fire at either a producing well or a well being drilled may be of the impinging type because of the presence of derricks, pumping, or drilling equipment, and would consequently require relatively large amounts of extinguishing equipment. However, in many cases it may be possible to remove all gear from the vicinity of the fire, leaving only the pipe stub. Extinguishment of the resulting vertical jet type fire would require considerably less equipment than an impinging type fire.

Reports have been received regarding the successful extinguishment of two gas well fires in Venezuela using dry chemical equipment. The first fire occurred at a producing well flowing 400 bbls. per

(*Continued on page* 1138)

Fire Service Ventilation in Principle and Practice

Part II—Heat, Smoke and Gases—Effects of the Products of Combustion—Explosions and Backdrafts

By ROI B. WOOLLEY
Assistant Editor

Part I of this study of ventilation as applied to fire suppression and rescue reviewed the fundamental purposes, requirements and limitations of modern ventilation.

As has been pointed out by the author, any study of scientific ventilation must embrace a number of fundamental technical factors, of which perhaps the most important is combustion and behavior of fire.

One of the first things the fire fighter must learn is the basic cause of fire as expressed in the triangle: fuel-plus-oxygen-plus-ignition. The further he delves into the fundamentals of fire, and what causes it, and the results measured in terms of lives and property lost (and of dangerous, exhausting work for the firemen), the greater will be his grasp of the principles of ventilation and its critical need in the modern techniques of attack on fire.

In the following chapter (Part II), the author discusses briefly those more common elements which are encountered by the fire fighter in this connection, i.e.: heat, smoke and gases. Manifestly it is impossible to attempt to embrace the entire story of these products of combustion in the space allotted to this installment. The best the author can hope for is to set down the high points in the simplest possible terms and phraseology, in the hope that these data will inspire the student of fire suppression to fill in the background. For those who like statistics, he has included a number of tables, taken from various accredited authorities, which may prove helpful.

Upon the conclusion of the complete study, due acknowledgment of their assistance will be made to these, and the other sources of data upon which the author has drawn.

EVERY experienced fireman remembers the axiom: Locate the fire; confine the fire; extinguish the fire; prevent rekindle of the fire. Therefore the first major step in fire control is to *locate* the fire—no matter under what conditions it may be burning or how completely it may be concealed. And this is the justification for the emphasis placed upon ventilation by experienced fire fighters.

In Part I of this study we attempted to define ventilation as applied to fire control. Before we set out to review all the numerous components that enter into the subject of ventilation, it would perhaps be well to devote a few words to a brief description of smoke and how it acts upon the lungs, and just why fire fighters should have a fundamental understanding of the combustion and the behavior of fire, and the hazards inherent in smoke, gases and fumes not only to occupants of burning structures but to fire fighters themselves.

Smoke and Gases—Products of Combustion

The salvage squads who rushed the furniture from burning palaces in Ancient Rome had little to fear but the visible and obvious hazards of smoke and flame. With our modern types of construction and present-day occupancies there are added dangers of carbon monoxide produced by imperfect combustion, illuminating gas, ammonia fumes from refrigeration plants, hydrogen sulphide from refrigerators and, particularly in the larger cities, all types of chemical fumes.

The two most important hazards to be considered in any study of ventilation are smoke and toxic gases. First let us briefly consider what smoke is.

When materials are burned, oxygen combines with the carbon and, if combustion is complete, the harmless gas, carbon dioxide, is the result. However, sometimes portions of the carbon are carried away from the fire by the currents of heated gases before they have been completely consumed by fire. As a result, there are particles of soot and tar released, and various distillation products formed, that have an irritating effect on the nose and eyes. Ordinarily none of these is poisonous in the amount in which it is found in ordinary smoke.

As every fireman knows, there are various types of "smoke eaters." Some can "take it"—others shun all smoke-filled areas. However, the immediate effect on eyes and lungs is such that it prevents the fireman from performing effective work.

One definition of smoke is given by Dominge and Lincoln* as follows: "Smoke is a complex gaseous mixture carrying more or less solids of various

*Fire Insurance Inspection and Underwriting; 6th ed., 1948.

Three firemen, one a chief, and two civilians were killed, and 130 others, including 19 fire fighters, injured when gases from burning materials ignited, in Reno, Nev., notwithstanding fact that front windows had previously been removed. Photo taken a few seconds after blast shows victims in street and on walk. Glass and a slot machine were blown clear across wide streets. Assistant chief was blown from store under aerial ladder. Only ladder belt saved man on ladder.

composition known as soot or free carbon, and a large amount of carbon monoxide and is the result of imperfect or incomplete combustion or oxidation."

The smoke which accompanies most ordinary forms of combustion is a product of great complexity, and differs greatly with the nature of the substances or materials being burned. Practically all forms of fuel, and the majority of substances consumed during a fire, contain carbon and hydrogen as their most important constituents, and with the free access of air, the products of combustion consist of water vapor, nitrogen and the two oxides of carbon previously mentioned—carbon dioxide and carbon monoxide.

According to one authority, S. G. Gamble** the proportion of these two oxides present in smoke depends upon the mass of incandescent carbon, the amount of air which can gain access to it, and the condition of the surface of the fire, so that with a brightly burning mass of timber urged on in its combustion by a brisk wind, and with the surface well alight, practically nothing but carbon dioxide escapes, in company with water vapor and nitrogen, while if the interior of the mass be well alight, and air is only slowly passing through it, and the products escaping from the surface at a comparatively low temperature, then smoke containing a very high percentage of carbon monoxide will be formed.

Of the gaseous products of combustion, steam alone plays an important part in the formation of smoke, while the other important constituents are tar vapour, minute particles of unburned carbon, and ash, drawn upward by the draught created by the heat of the fire.

Usually the degree and intensity, or denseness of the smoke of a fire—and to some extent, its color—are in direct ratio to the amount of these minute particles of unconsumed carbon.

As an example, take the case of a building in which a fire is just starting. The smoldering wood, carpets and other furnishings, not yet in full blaze, give out a whitish, or bluish-white smoke of no great density, but of choking characteristic, consisting almost entirely of these floating vesicles produced by the distillation of compounds of carbon and hydrogen at temperatures of about 1,295 deg.F to 1,475 deg.F. When, however the premises are well ablaze, especially if the building should contain oil products, then besides the whitish, or bluish-white smoke, there will be the dense blackish smoke, due to the presence of large quantities of carbon particles.

Actually, the amount of carbon in smoke is much less than is generally supposed, even when it is given off by bituminous coal under imperfect conditions of combustion in an ordinary furnace or fireplace. However, to the fire fighter, who has little time to analyze smoke, the immediate problem is—"how much of the stuff can I inhale without injury in pushing my attack on the fire?"

It has been said that old-time fire fighters could accurately determine the nature of the materials burning from the smoke given off by the fire. Perhaps that is true, but in those days the burning did not cover the multiplicity of complex chemicals that it may today. This chemical era in which we live, has produced literally thousands of chemicals or combinations of chemicals which can trap even the most experienced "smoke eater" and which were not foreseen by our forefathers of the fire service. Thus it is that today's experienced fire fighter does not rely upon any one of his senses —sight, smell, taste or touch—yes, the last two do have a place in some smoke evaluation—to attempt to determine what is burning from the smoke given off.

This does not mean of course that these senses should not be employed to that end; in many cases accurate deductions can be made from the evidence of color, odor, density, taste and even feel. Couple this evidence with the visual evidence of the structure involved, the apparent indication (from the sign on the structure indicating occupancy of the contents)—and you can't go far astray. But it is always well to make assurance doubly sure when the occupancy is in

Elmira, N. Y., fire fighters on leeward side of heavily charged furniture warehouse were forced to operate at a distance. Such situations call for heavy streams, turret and ladder pipes and plenty of respiratory protective equipment. Note how smoke blanket increases difficulty of hosemen in locating openings through which to operate streams. Wind may be a big factor in such situations.

Photo courtesy Paul Thayer

What happens when heated gases of combustion ignite on contact with oxygen. Variously called "blow," "backdraft," "hot air explosion," etc., this situation poses dangers to firemen who may be caught on ladders or other exposed places.

**Outbreaks of Fire, Their Causes and Means of Prevention; 1926.

doubt, or where the involved premises indicate chemical production and/or storage content.

Every professional fireman knows for example, that tobacco smoke, the smoke of burning rubber, (as insulation) the smoke of burning rags, from timber or from animal matter, all differ so widely and are so distinctive, that very little experience enables an observer to form some sort of conclusion as to what kind of material is burning. As the smoke grows denser, however, the nose becomes less able to differentiate between the various odors. The irritating effect of the smoke on the eyes, nose and respiratory organs increases, until a certain density is reached, when the smoke-laden atmosphere becomes irrespirable and asphyxiation may result.

Perhaps a word about odors may not be amiss at this juncture. The difference in odor is almost entirely due to the liquid envelopes of the tiny vesicles (small bubble structures) that constitute the principal portion of the smoke, the liquid being composed of the products of the action of the heat upon the burning substance, which are mostly of the same character as the products that would have been obtained if the substance had been subjected to destructive distillation in a retort. Coal smoke, for example, has the gassy smell of the hydrocarbons developed in its distillation, augmented by the sulphur compounds emitted at the same time. Burning wood, on the other hand, gives smoke acrid and pungent to the eyes and nose, owning to pyroligneous, or acetic acid, the vapors of wood—wood naphtha, naphtha acetone and similar bodies.

For over 30 years, fire suppression students have known that to promote attack upon fire, where smoke conditions are present such as during the early stages of a "working fire" when there may be more smoke than fire, a good filter device would afford some help as the poisonous products of incomplete combustion are mostly absent. But when a fire has been in progress for some time, there may be a considerable percentage of carbon monoxide present, the product of incomplete combustion. This introduces the most serious source of danger to fire fighters as the respiratory equipment available may not be capable of removing it.

Again, it should be stressed that in most types of fires, *more than one combustible material is involved;* thus a building fire may involve not only the materials in the structure itself, such as wood, etc., but its combustible contents, such as textiles, etc. Therefore, any one of several elements may affect the smoke, its odor, density and toxicity, and consequently the ability of the fireman to endure it. For this reason no hard-and-fast standards can be laid down for judging the nature and extent of a fire by the smoke given off.

There are tables which attempt to classify smoke, and its affinity for certain products of combustion, according to color and odor. Thus it may be said the smoke of burning rubber is black, and has distinctive odor. But the rubber may be in insulation, or tires, or other products. And we're told any chemist can concoct an odor of burning rubber out of the mixture of different chemicals. Black smoke may be, and usually is, the result either of burning rubber of some kind, or tar (as roofing) or gasoline, oil or other flammable liquid. Also the tables will tell you brown smoke may indicate nitrous oxide fumes, and that white smoke is an indication that the fire is being extinguished and that steam is being formed. This may be true but, again, it may be phosphorus or magnesium that is involved. Finally, we're told that "grayish-yellow" smoke is the danger signal, and that this smoke, which is usually dense and heavy, may broadcast the fact that there are unburned gases formed which are hungry for oxygen, and we are warned accordingly to beware this evidence and guard against back-draft.

Chicago firemen were forced to fight this paper warehouse fire from exterior because of heat and smoke conditions. It is frequently impossible to ventilate such occupancies. Note how dense smoke hides building openings and cuts visibility.

But all tables and all classifications have many imponderables that affect the definitions, such as the time of day (smoke may appear very different by night than by day); the kind of weather; and so on. Therefore to offer another platitude: in attempting any evaluation of a burning substance not plainly apparent, by analyzing the smoke given off, remember that discretion is the better part of more things than valor. Play it safe if there is the slightest doubt!

A first reliance of the attacking fire force in any fire where there is evidence of smoke accumulation or poisonous gases, or oxygen deficiency, is to don modern respiratory protective equipment, with emphasis on that apparatus which provides its own air and/or oxygen supply.

In the absence of such respiratory protective equipment, or even with their use, a first point of consideration at inside fires is the question of ventilation, or ridding the structure or area of the dangerous, poisonous smoke and gases. The experience of progressive fire departments shows that the fire may be more readily attacked and localized if it is well ventilated.

It must be admitted that in the early days of fire fighting the value of ventilation was not generally recognized or appreciated. In fact, considerable care was frequently taken to prevent smoke and hot gases from escaping from the building or area in which there was a fire. During the early part of the present century, some fire departments learned through experience that the ventilation of buildings under certain conditions enabled them to combat fires with much greater facility. In these earlier attempts, the methods of opening up buildings were crude and much unnecessary damage was done; however, as time went on, fire department officials realized the great advantage of clearing buildings and areas of smoke and hot gases so that fire fighters could enter and advance their lines, as well as make rescues.

Before the days of ventilation, the regular procedure was to stand outside and "peg" away into areas filled with smoke before it was ever ascertained where the main fire was located. Even today, water losses, which are frequently greater than the actual loss by burning, are unnecessarily heavy in many areas because of the persistence in adhering to this old method of throwing water "into the smoke."

The quantity of smoke given off by a fire is not always an indication of either the extent of the fire or of just what is burning. A burning tar pot can well create the impression that an entire building is going up in smoke and that it is heavily loaded in volatiles. On the other hand, a light, pale transparent smoke is no indication that there are not chemicals involved and that danger faces the fireman in his attack.

Back-draft

An entire study can be devoted to the subject of "back-draft," or "smoke ex-

plosion" or gas explosion. Every fireman knows and fears this phenomenon. Nor has anyone as yet come up with another remedy for it other than prompt, adequate ventilation.

As will be pointed out later, one of the precautions which must be observed in ventilation is not to open up any door, window or other opening which would directly hazardize adjacent property or more particularly, the attacking fire forces. The case histories of almost all fire departments contain the records of back-drafts or gas explosions which were attendant upon the opening up and ventilation of structures involved by fire. And there does not have to be very much fire in order to create the explosion.

Too much emphasis cannot be placed upon the study of fire and fire travel.

Behavior of Heat

Why do flames, hot gases and smoke rise? They rise for the same reason that a cork will rise when released at the bottom of a tub of water. When a body is immersed in a fluid, that body is buoyed up by a force equal to the weight of fluid displaced by the body. If a bag full of gas displaces one pound of air in the atmosphere, that is, occupies the space that a pound of air would, the force tending to raise the bag would be one pound. If the bag rose, it would show that the bag, plus the gas therein, must weigh less than one pound. If the bag and gas weighed more than one pound, it would not rise, for the force tending to raise it is only one pound.

Oil floats on water, for if it were immersed it would displace a weight of water greater than its own weight; a balloon inflated with light gases floats in the air because it weighs less than the air displaced, and hot gases and warm air rise because on heating they expand and displace a volume of the surrounding cool air greater than their own weight and therefore must 'come to the top.'

As a concrete example, 200 cubic feet of air at 36 degrees F. will expand to occupy a space 300 cubic feet at 300 degrees F., or the volume increases 50 per cent by heating 264 degrees F. And the weight of the air per cubic foot must then decrease one-third by heating it through this range. Thus if 200 pounds of air were heated 264 degrees, it would occupy the same space that 300 pounds of unheated air would. In other words, it would displace 300 pounds of unheated air. The over-balancing force which causes this heated air to rise would then be 300—200=100 pounds. It will be seen that where air is heated to over 1,000 degrees F. at fires, it will rise very rapidly, in fact, rapidly enough to carry embers and pieces of charred wood to considerable heights if not confined. The practice of ventilation is based on this principle of heated gases rising. Hot air, gases and smoke (excepting a few heavy gases such as chlorine, etc.), tend to rise in a building on fire.

Let us consider the progress of a fire in a closed building. Usually the fire we are describing develops after working hours, when there is less chance of its being detected in its incipient stages (unless of course the building is equipped with mechanical fire detection and alarm transmission systems).

It doesn't matter exactly where or how the fire originates or in what material. It starts in combustible material and it will burn freely as long as it has oxygen to feed on.

As the heated gases of combustion are created, they rise for the reasons we have given above. And convection currents so formed may diffuse the smoke and gases throughout the structure.

As the fire continues to burn, generating hot gases, the room temperature rises and the percentages of carbon monoxide, and other combustible gases produced by distillation increase. What is happening is that (1) the air in the room is being heated; (2) the supply of oxygen is being exhausted; (3) and the percentages of flammable gases are being increased.

Naturally, as the supply of oxygen is consumed the fire assumes different characteristics. It has ample heat to distill flammable gaseous elements from the combustible fuel, but complete combustion cannot continue in the presence of inadequate oxygen supply, and heavier smoke appears.

If the area is tight enough, the fire, which has been reduced to the smoldering stage, can die of innation or suffocation. However, buildings are not airtight and further, certain materials have some available oxygen in their makeup. Therefore the fire continues to smolder, building up heat and pressure against the containing walls, producing a possibly hazardous explosion situation.

This dormant, sluggish fire only awaits a current of fresh air to ignite the pressurized gases and cause a "back-draft", after which it is more than likely the fire will travel through available unprotected openings still tending upward generating smoke and gases, until it reaches an obstruction. Here it would spread laterally to provide the mushrooming effect so frequently noticed in the upper stories of buildings in which fires have occurred and which were not, or could not be ventilated at top level.

A point which should be made at this time is that the presence of smoke does not necessarily mean that fire is always where the smoke is. Many a fire officer has been misled by assuming that because smoke is escaping from one floor, or one corner of a building, the fire must be on that floor or at that corner, whereas actually the fire may be a considerable distance away, the smoke having found an opening to vent itself.

In order to help better understand the fire hazards involved in this combustion the fire fighter should know something about the physical and thermal properties of common fuels both solids and liquids, which he may encounter. At the same time, he can well afford to bone up on factors which will help him to assay smoke and fire intensity. In this connection the following specimen tables may be of some assistance.

Tendency for heated gases and smoke, the unburned products of combustion to rise, is graphically shown by this illustration of a fire in a Minneapolis bag company. It is practically impossible to locate the heart of such a fire. Ultimately, sufficient oxygen, unless streams have cooled the fire, will ignite fire to involve the entire structure.

FLAME TEMPERATURES

Heating, Ventilating and Air Conditioning Guide

American Society of Heating and Ventilating Engineers

The appearance of a flame or products of combustion may serve as an approximate measure of the temperature. The luminosity of a flame is caused by the heating to incandescence of unconsumed particles of combustible matter. The following table applies to flames from ordinary fuels such as wood, coal and fuel oil.

Appearance of Flame	Temp. Degrees F.
Red, visible in daylight	975
Light red	1832
Orange-red	2012
Orange-yellow	2192
Yellow-white	2372
Bright white	2550

(*Continued on page* 1144)

Firemen Display Ingenuity in Holiday Decorations

The "Great White Way" of Broadway shows no greater ingenuity and resourcefulness in its Holiday "spectaculars" than do many of the displays fashioned by members of the nation's fire service.

It is doubtful if any better good-will building creation was ever undertaken than the work of the nation's fire fighters in resurrecting old toys and making new ones for children, and in promoting fire-safe Holidays. Many of the display creations turned out by volunteer and professional firemen would take prizes in any display contest. In fact, some of them, like Meaderville, Mont., for example, have won top awards.

This year the editors wish they could reproduce and describe the whole gamut of showings, from the modest window trims, to the gigantic "spectaculars" created by our firefighters; but unfortunately space does not permit.

Long Beach, Calif., Display Includes "Snow"

Christmas means just as much in the balmy temperatures of California as it does in the frigid belt of New England. But when fire fighters of the Coast create their holiday displays, they don't have the natural snowy background that may serve their brothers from colder climes.

The display conceived and built by the Long Beach, Calif., fire fighters (see cover of this issue) was complete down to the firemen figures on the apparatus, perched atop the fire station, and the "snow" on the roof.

The men obtained scrap plywood from a nearby trailer manufacturer and searched out other material for their display from various other places. From this they fashioned the ladders, hydrants, axes, etc., for the trees. The engine, with its load of toys, including Rudolph the Red-Nosed Reindeer, and the little firemen on the tailboard, all were cut out of plywood.

To cap off the showing and round out the Holiday message, recordings of Christmas carols were played through an amplifier. This display was particularly effective at night, and brought the members of the department many glowing testimonials, according to Fire Chief Frank Sandeman.

Charleston Naval Shipyard Dramatizes Fire Safe Christmas

The Shipyard Fire Department of the U.S. Naval Base at Charleston, So. Carolina, C. E. Crawford, Fire Chief, dramatized the "Fire Safe Christmas" with the colorful holiday display shown herewith.

The picture of Santa Claus measured 10 ft. by 28 ft. The message "Wishing You a Merry Christmas" was 4 ft. by 16 ft. The wording "Prevent Fires" was 14½ in. by 8 ft.-10 in., with 8 in. neon letters (red) which flashed on and off at 5 sec. intervals.

The sign and message were painted with fluorescent paint, illuminated with twelve 80-watt ultra-violet black lights. The display was designed to have special night appeal. It was installed on top of one of the Base fire stations located at the intersection of Cosgrove Ave. and Highway 525 where traffic is heavy. Incidentally, little Rudolph's red nose blinked at 2½-sec. intervals.

The display was but one detail of a holiday campaign for fire prevention, which included talks, demonstrations, and a close check on all Christmas trees in the Base. As a result, Chief Crawford reports that the Shipyard Fire Department did not receive a single call for a fire from 23 December 1952 to 15 Januarv, 1953.

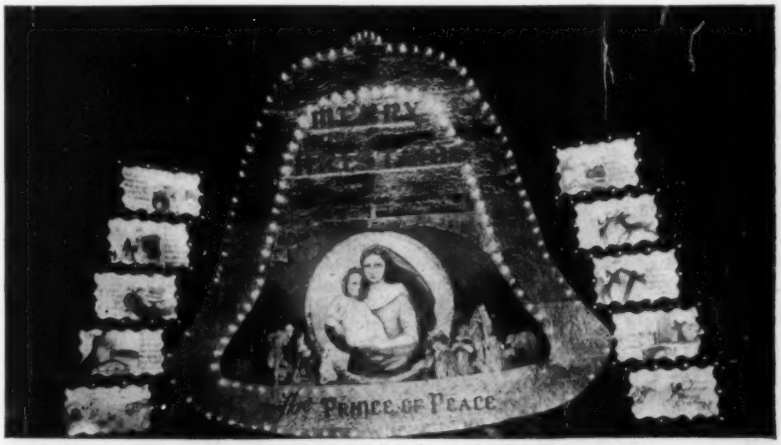
Meaderville Vamps Repeat Christmas Prize Winning Display

The enterprising volunteers of the Meaderville, Mont., Fire Department (Chief Frank Gorsh) created an outstanding Christmas display which was not only the pride and joy of the local townsfolk, but also of the entire area.

The display depicted the Prince of Peace and Rudolph the Red Nosed Reindeer, who played the star role, blending the religious and fairy tale aspects of Christmas. It was predominated by a huge Christmas bell of gold and silver, inset with a picture of the Madonna and Child, and smaller pictures of the admiring Magi and shepherds. A 14-foot Merry Christmas appeared at the top of the bell. Five shadow boxes at each side of the 30 by 30 ft. bell depicted the story of Rudolph, with legends in rhyming couplets.

The Meaderville "greeting card" was illuminated by approximately 400 light bulbs carrying 25,000 watts. It took the vamps five weeks to build it. Meaderville fire fighters in the district work together on a variety of community service and improvement projects, throughout the year. The Christmas display climaxes their efforts, which are rewarded by a dance at the American Legion Hall on Christmas night.

It should be added that although the volunteers had set their heart on an entirely new display for last Holidays, the small fry of the community would listen to nothing else than that the old, prize-winning showing should be included. That is why the reindeer drawing Santa's sleigh over snowy rooftops, which have moved above changing central displays for the past several years, was erected again in a section of the fire yard adjacent to the main greeting billboard.



Prize winning display of Meaderville, Mont., Fire Department.

Charleston, S. C., Naval Shipyard Christmas display stresses fire safety.

ST. THOMAS FIRE DEPARTMENT BENEFITS FROM MAJOR CHANGES

Reorganization on Part Paid Basis Results in Marked Improvement in Efficiency

By Omar Brown
Chief, Charlotte Amalie, St. Thomas, Fire Department

OUR Municipal Fire Service at Charlotte Amalie, St. Thomas in the Virgin Islands, was organized about seventy-five years ago. This was during the Danish Administration of these islands, which were then known as the Danish West Indies. The Fire Department in those days was known as the Brand Corp. It consisted largely of young men who were drafted to serve for a period of one year without pay. Beginning in the year 1917, when the United States purchased these islands from Denmark, and until early this year, the St. Thomas Fire Department, as it was called, operated under the Public Works Department, with the Superintendent of Public Works also serving as Fire Chief. Early this year the legislature established the present Municipal Fire Service and put at its head a paid Fire Chief, appointed by the Governor with the approval of the Municipal Council. The Municipal Fire Service is still a Division of the Public Works Department, but the Fire Chief has full responsibility for the proper functioning of the Service.

Our organization consists of the following regular paid personnel: A fire chief, fire inspector, two full-time paid fire truck operators, four full-time paid firemen and two part-time fire truck operators (night duty). In addition to the paid personnel, we have three groups of volunteers designated as Companies I, II, III. Each group of volunteers consists of ten men with a Deputy Chief and an Assistant Deputy Chief. These volunteers are doing excellent work and respond to fire alarms equally with the regulars.

Our fire apparatus is thirteen to fourteen years old with the exception of one Jeep fire truck which is four years old. Realizing the need for improved and additional fire-fighting equipment, such as gas masks, fog nozzles, helmets, raincoats, and rubber boots for the men, at one of our meetings it was suggested that a committee be asked to sponsor a fund raising drive to help to equip the fire service with these essential things and especially to assist the volunteers in obtaining the necessary equipment for their units.

In August of this year a group of citizens, under the chairmanship of Attorney Edith L. Bornn organized a Citizens' Fire Protection Committee and wrote to the Honorable Morris F. de Castro, Governor of the Virgin Islands, requesting that he issue a proclamation establishing August 30th to September 5th as Fire Prevention Week. That week was chosen because of our immediate need for a campaign and also because the committee was not aware at that time that Fire Prevention Week is traditionally celebrated throughout the United States during the calendar week including October 9th.

Residents of Charlotte Amalie, St. Thomas, V. I., hear fire authorities talk on fire prevention. Standing from left to right are Attorney David A. Maas, Master of Ceremonies; Attorney Edith L. Bornn, Chairman, Citizen's Fire Protection Committee; Raul Gandara, Fire Chief of the Commonwealth of Puerto Rico; Honorable Morris F. de Castro, Governor of the Virgin Islands; Leo Simms, Navy Fire Marshal; Lieutenant Henry Morris, Acting Director of Police; Adolph Gereau, Civilian Defense Director; Omar Brown, Fire Chief of St. Thomas; Honorable Joseph Gomez, Chairman of Municipal Council, and the Rev. E. L. Malone, Jr,. Pastor All Saints Parish.

Fire Prevention Week in the Virgin Islands began with a reception which was held at the historic Bluebeards Castle Hotel. A fee was charged those attending and various games of chance were operated as a part of the fund raising drive. All of the refreshments and other snacks were donated by local merchants and the hotels. Nearly $700.00 was raised from this activity. On the next afternoon, Monday, August 31st, the fire service personnel and all of the members of the Fire Protection Committee were the guests of the Governor of the Virgin Islands at the Executive Mansion at Charlotte Amalie. All during the week radio programs on fire prevention methods were held. On Tuesday evening a large group of Fire Service personnel, comprising representatives of all of the volunteer groups held a very informative program. A Civilian Defense drill was held on Wednesday during the mid-afternoon. A Chemical Corps Officer, Lieutenant Justiniano, flew over from the Antilles Department in Puerto Rico to assist with the discharging of prima cord, simulating an air attack, and the setting off of the smoke grenades Accompanying him was Army Fire Engineer, John Breen, also from the Antilles Engineer Office at Fort Brooke, Puerto Rico, who had visited the islands on a previous occasion in connection with a survey of the equipment on hand to fight fires caused by atomic attack. For the drill, four sites were selected to represent points at which bombs were dropped causing fires. The regulars were assigned one bombed area and each of the three volunter groups were assigned one of the remaining three areas. A telephone call from an area to the Control station was the signal for one of the assigned fire units to respond immediately and proceed to its assigned area. The entire exercise lasted for approximately one hour. After these exercises, all of the groups met with his Excellency the Governor, the Director of Civilian Defense, Adolph Gereau, Army Fire Engineer Breen, and Lieutenants Justiniano and Figueroa, to discuss what had just taken place at the drill. Judging from the comments of the observers all went well.

On Thursday, September 3, 1953, a parade, in which all of the firefighting units participated, was led along the principal streets of quaint old Charlotte Amalie by the Community Band and the majorettes. Color guard was furnished by the newly organized Sea Scouts of Troop No. 536. The trucks carried posters stressing fire prevention measures. The populace responded in carnival spirit. Following the parade, a brief demonstration in fire-fighting was given on the waterfront within full view of the public.

The following evening, Friday, September 4, 1953, was set aside for the big out-door program in the Emancipation Garden at which Puerto Rico's Fire Chief, Raul Gandara, was the guest speaker. In introducing Chief Gandara, Chief Brown of St. Thomas praised him for his excellent cooperation in assisting in many phases of the reorganization of the municipal fire service. Chief Gan-

(*Continued on page* 1143)

Mobile Communications Unit Big Aid to Firemen

The effective use of specialized Civil Defense equipment was demonstrated in Virginia on October 24th last when a raking forest fire swept over 3,000 acres on steep mountains and in deep valleys.

Fire officials estimated the timber loss at over $100,000 as the flames burned over Fort Lewis Mountain, Catawba Mountain, and through Catawba Valley in Roanoke County.

Coordinating the efforts of crews on a dozen fronts was a problem until J. Robert Thomas, Civil Defense Director for the City of Roanoke, sent the CD Mobile Communications Center into the area where it became a command post for all operations.

State Forestry Department units, Roanoke County and Town of Salem Fire Apparatus, state police cars and county sheriffs' cars were scattered throughout the area and, despite the variance in radio frequencies, all were tied together through the Mobile Communication Center. In addition several "walkie talkies" were in contact with the command post.

By quickly dispatching task forces from location to location, over mountain roads, more than 100 cabins, summer homes and small residences were saved in the path of the flames. Not a single building in the fire area was lost, notwithstanding that firemen were handicapped by a lack of water, and had to truck water in booster tanks and tank trucks from place to place as buildings were threatened. The communications center directed these operations with a minimum of lost time.

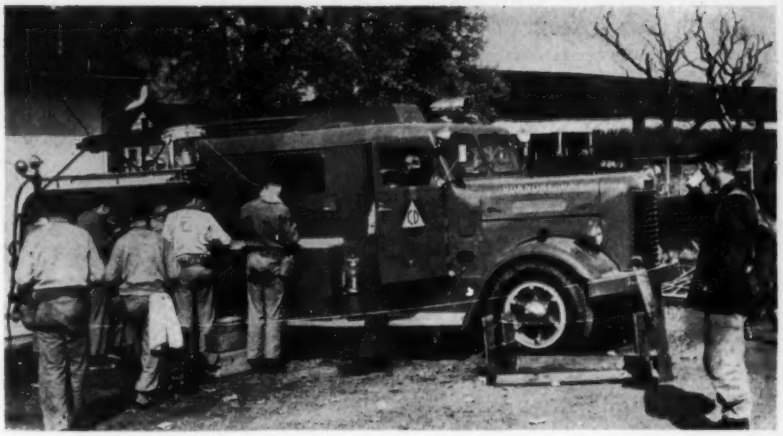
The forestry service men, county firemen, and local volunteers were augmented by students from Virginia Polytechnic Institute, Roanoke College, Virginia Military Institute, Ferrum College, Andrew Lewis High School, of Salem, and Montvale High School, Bedford County.

The Roanoke County Red Cross Chapter joined the Forestry Service in operating mobile kitchens during the three days and nights of fire fighting.

State forestry officials were able to direct the fire fighting over many square miles from the unit. Ozzie Whorley, Roanoke *World-News* staff writer, described the operation through the radio unit as "a command post operating with military precision."

M. C. Wagner, Secretary of the Blue Ridge Amateur Radio Society, directed the operation, servicing mobile radio units, including six "ham" units. He was assisted by Joe Francis, Eldridge Emswiler, Joe Hazlegrove, Raymond Crumpacker and John Crawford, all Roanoke area "hams."

Mr. Thomas, J. D. Sink, City Communications officer, and Francis S. Brigham, president of Oren Roanoke Corporation, designed the communications unit which was built on the regular fire engine chassis employed by Oren. The heart of the unit is in the large extended sedan cab where a radio operator sits at a semi-circular desk. From his fixed base swivel chair, he can operate seven radios, all on different frequencies, and can transmit and receive on the several circuits. With the changing of crystals, most every frequency prevailing in any area can be serviced from the Mobile Center. The unit also carries a supply of telescopic poles, spools of telephone wire and insulators for setting up emergency telephone circuits.



Mobile communications center in operation at Virginia forest fires, October, 1953.

Power is supplied from a 5,000 watt generator which has its own independent gasoline engine. Other equipment includes ladders, an assortment of fire extinguishers, rescue tools, first-aid equipment and floodlights.

In addition to serving as a coordinating mobile communications center to direct operations in an emergency, the unit is designed as an emergency power and light supply for a hospital in event of power failure. While the 5,000 watt output is not sufficient to supply all the electric current needs of a hospital, it is considered enough to supply operating rooms and other critical rooms.

The unit was purchased by the City of Roanoke with contributing funds from Federal Civil Defense Administration. The Oren Roanoke Corporation donated a part of the cost as its contribution to the local CD effort.

Johnstown, Pa., F.D. Gets Good Boost

Once in a blue moon a fire department gets an unusual and powerful public relations assist from a local newspaper which goes beyond the mere fire prevention week plug.

Such a boost was given the Johnstown, Pa., Fire Department, Chief Albert W. Fisher, recently, when the Johnstown *Tribune-Democrat*, leading newspaper of the area, devoted almost the entire edition of August 22, 1953, to promoting not only the local fire department but the fire services of the entire area, including Cambria, Somerset, Bedford and Indiana Counties, and eastern Westmoreland County volunteer organizations.

The special tribute marked the ninth of a series of centennial special editions commemorating the 100th year of the *Tribune-Democrat*. It comprised three large sections of 32 pages, together with a special editorial in the regular news section.

The subjects covered a broad range, including the role played by the fire departments of the area, their history and growth, the fire record of the city and of the nation, and much emphasis on fire prevention. Special historical events, such as the disastrous Johnstown flood of March 31, 1889, which took over 2,200 lives; the "false alarm" that same year, which panicked the audience of Parke's Opera House, resulting in the deaths of 10 persons and injury to 30 others of the 800 in the audience, and stories of the great fires of the area were told in detail.

The edition constitutes a comprehensive history of the origin, growth and accomplishments of the fire service of this historical Pennsylvania section.

October Fire Losses

Estimated fire losses in the United States during October amounted to $68,551,000, it was reported by the National Board of Fire Underwriters.

According to Lewis A. Vincent, NBFU's general manager, this $68,551,000 loss represents an increase of 7.2 per cent over losses of $63,958,000 reported for October, 1952, and a decrease of 0.1 per cent from losses of $68,613,000 for September (1953).

Losses for the first ten months of 1953 now total $751,896,000, an increase of 16.4 per cent over the first ten months of 1952, when they amounted to $645,697,000.

These estimated losses include an allowance for uninsured and unreported losses.

Portuguese Blast Kills 17

A waterfront munitions factory blew up in Lisbon, Portugal, on Nov. 24th, killing seventeen persons and injuring 149. Among the victims were eleven women employees, and children in a nearby school building, who were hurt by flying glass Some bodies were blown through the windows of the main building of the factory.

The blast occurred on the first floor of a building where 87 men and apprentices were reported testing mines. It wrecked the structure and shattered roofs and windows over an area of 200 yards.

Rescue workers, including firemen, converged on the scene and went to work to remove the victims, some horribly mutilated. Many unexploded mines, grenades and fuses in the wreckage made rescue work hazardous.

The plant was said to be turning out munitions for North Atlantic Treaty Organization members. Portugal is a member of the NATO.

Holbrook Forms Own Fire Department

Donald Holbrook, whose name is well known among New England—and particularly New Hampshire—fire fighters, and who owns a year-round home in the Bowkerville area of Fitzwilliam, that state, has formed the Meadowbrook Fire Company of Fitzwilliam.

It isn't exactly a private fire brigade, nor is it by any means Holbrook's fire company—it is today a full scale, volunteer fire unit which cooperates closely with the two volunteer fire departments now established in Fitzwilliam and Troy, N. H.

But a word about this fellow Holbrook. In business and professional life Don Holbrook is a business analyst and manager of invested capital, with offices at 84 State street, Boston. But most of the time he is a student of fire protection and prevention. In that capacity he has "lived" fire and suppression since he was able to tag along after the old steamers.

His search for knowledge into firemanship led him to close acquaintanceship with the Boston Fire Department and other Fire organizations in the area. In 1934, he traveled to Europe to study fire protection in foreign countries. He later took courses in firemanship training in the Boston Fire College. In 1935 he received an official appointment from the city of Newton, Mass. as civilian aide to the chief of its department, which post he held until entering the service in 1942. From 1942 to late 1944, Major Holbrook served on the staff of General Ray Guy Harris as his Chief of Fire Protection and Intelligence. During his service he had much to do with surveying fire hazards and establishing fire protection measures throughout a thirteen states area.

Convinced that additional fire protection in the Bowkerville area of the state would be welcome, Holbrook initiated a study to determine how this might be brought about. He held personal conferences with New Hampshire officials, the Commissioner for the N. H. Registry of Motor Vehicles, the secretary to the New Hampshire Board of Fire Underwriters, various New Hampshire fire officials, the State Police, and others. He traveled over to the Town of Weber, N. H., where he conferred with one Clarence Hyde, who had successfully established a private fire company in that Town. Then Holbrook acted.

Opportunity came along to help him realize his plans, when he was able to purchase a standard 600 GPM pumper, in good condition. After conference with the Board of Selectmen in Fitzwilliam, he was assured they would welcome his establishing a private fire company on his property in the Bowkerville area.

After further clarifying the position of a privately owned fire company with the necessary authorities, the Meadowood fire Company came into being. A structure on Mr. Holbrook's property was remodelled into a firehouse and adequate heat and insulation provided. An outdoor fire alarm siren was installed, with remote control buttons at Mr. Holbrook's house and at his caretaker's cottage. Two pieces of equipment now constitute the rolling stock—the 600 GPM pumper, which has been remodelled at a fire apparatus plant, where a 400 gal. booster tank was installed, and a jeep, which carries a portable pump and various sundry equipment.

Mr. Holbrook was asked to accept the title of "Chief" and did so, but as a practical matter, because of his frequent absence from Fitzwilliam, much of the directional duties fall upon the assistant chief.

Wisconsin Chiefs see fire control demonstration.

At the twenty-fifth annual conference of the Wisconsin State Fire Chiefs Association, held at Green Bay, Wis., last Summer, the delegates had opportunity to witness a number of fire extinguishing demonstrations. One of the most interesting was that shown above, where a 750 gpm FWD pumper, delivering airfoam, extinguished an oil pit fire in approximately one minute. Photo shows fire at its height, and just as foam was about to be applied.

New Meadowood Company

Left to right: Donald Holbrook, the three Selectmen and the three firewards of Fitzwilliam, N. H.; the Chief of the village company; Assistant Chief Walter Tommila; the First Engineer of the Meadowood Fire Company; firemen of the Meadowood Company; Chief Walter Messer of Keene, N. H., and the Chief of the Troy, N. H., Fire Department.

British Fire Protection Year Book, 1954

The 14th edition of what has become to all those concerned with the prevention and extinction of fire in the British Empire an indispensable reference book has just been published. As was the case with previous editions, the subject matter in the new edition is divided into eight comprehensive sections, each dealing with a particular phase of fire fighting or fire protection. The first section constitutes a directory of all the public Fire Brigades in the British Isles and gives Fire Brigade statistics; second is a directory of industrial and private Fire Brigades and Salvage Corps in the United Kingdom, while the third section relates to the Fire Services of the Commonwealth and Empire. The fourth section deals with Government departments and public authorities concerned with fire prevention. Section five contains particulars of associations, institutions and societies interested in, or actively connected with, fire fighting and fire prevention. Section six deals with the legal aspects of fire safety; section seven is a directory of local authority civil defense officers and regional authorities in the United Kingdom, while section eight is concerned with fire engineering data. The Year Book includes a desk diary and a comprehensive list of suppliers of fire safety equipment as well as classified lists of such equipment and of trade names.

The publisher of Fire Protection Year Book is Fire Protection Review, Bouverie House, 154 Fleet st., London E.C. 4, England.

N. Y. Studies Compensation Laws of Volunteers

The New York State Temporary Commission on Fire Laws (State Fire Commission) of which Senator S. Wentworth Horton (Suffolk County) is Chairman, has just completed a study of the 34 county mutual workmen's compensation plans in New York State in relation to their effect on the volunteer fire service. County mutual workmen's compensation plans permit the county and the cities, town, villages and certain fire districts therein to join as self-insurers on a mutual basis to provide for the payment of workmen's compensation claims. The Commission is interested because these plans cover volunteer firemen killed or injured in line of duty. There are 43,000 volunteer firemen in the counties which have such plans.

Senator Horton said, "We now know, as to every county, city, town, village and fire district in the State, whether or not it is a member of a county mutual workmen's compensation plan. This information, in booklet form, has been made available to state and county officials."

Five Million Asked in Newark Brewery Fire

Families of nine men killed and 27 construction workers who said they were injured in a fire at the Anheuser-Busch brewery plant in Newark, N. J., on March 11, last filed damage suits on Nov. 20th, aggregating nearly $5 million.

Named as defendents in the suits were the Anheuser-Busch brewery and seven contractors. All suits charged the defendents with negligence. The latter were accused of failure to provide a safe place to work, fireproof ladders and proper exits. The killed and injured were employed by the contractors.

The families of the men killed in the fire asked for sums ranging from $214,000 to $350,000 each. The injured sued for $50,000 each.

Anaconda Suffers $1,000,000 Fire

Residents of Anaconda, Mont., were shaken by heavy explosions early on the morning of Oct. 31, last, which, with the accompanying fire, destroyed one building, levelled two others and caused widespread damage throughout the business area of the city.

The blast and resulting fire occurred in the 200 block on east Commercial street. The properties involved included a body shop at 209; a motors company at 203; a laundry at 105 Oak; a funeral home at 107 Oak, and the Odd Fellows Hall at 215 E. Commercial. Some fire damage was suffered by the Carpenters Union Hall at 217 E. Commercial and by an apartment in the rear of 217½ and a garage at 200 E. Commercial.

The force of the explosion ripped off the composition front of the Salvation Army Hall at 206 and shattered the front of a bakery company at 216. Flying sparks ignited a distant garage and some damage was suffered by the Center Theatre directly in the rear of the blast area, at 202 E. Park street.

Two men were injured by the explosion. They were father and son, the proprietors of Al's Body Shop in which the explosion is reported to have originated.

At least 14 used cars and trucks were lost in the fire, some of them parked in a lot between the body shop and motor company. About 10 cars in the repair shop were safely driven from the building, while flames swept through the laundry and dry cleaning company overhead.

The explosion is believed to have occurred in an acetylene generator in the paint department of Al's Body Shop. Flames immediately involved the Odd Fellows Hall and the two-story brick building housing the laundry, motor company and funeral parlor. The walls of the two-story, half-block-long structure caved in during and after the fire.

Anaconda's two pieces of fire apparatus responded promptly to the alarm, received about 1:30 A.M. and help was quickly called from Butte, Big Butte and the A.C.M. Company's fire department at the Anaconda Reduction Works.

Sixteen fire fighters and two pumpers were dispatched from Butte; One from the Butte City Fire Department, under Chief John O'Donnel, was located in fire headquarters of the Smelter City Fire Department to cover Anaconda. Chief Ben Gannon headed a 10-man crew from the Mining City's Big Butte Volunteer Fire Department which reported to the scene of the fire. In Butte also, that city's Race Track Volunteers were alerted ready to respond to Anaconda if called. The Butte forces made the run in about 26 minutes.

Ten hose lines were used at the height of the fire to gain mastery over the roaring flames. This was accomplished by 4:00 A.M., although firemen stood by throughout Saturday Nov. 1st for possible reignitions.

The explosion reportedly knocked out almost 1000 telephones in the business district and private homes. The main power feeder serving Anaconda was also temporarily put out of business.

Property losses were estimated at $1 million.

Selling Youngsters on Fire Prevention

Every fire officer knows the wisdom of enlisting the small fry in fire prevention. But doing it is another matter. Here's how they operated in Colorado Springs, Colo., to drive home fire prevention and F. P. Week, as reported by fire buff extraordinary, Lester L. Williams, M.D., of that city.

Obviously to put over fire prevention it takes selling. Selling, to be successful, should have drama and action. Although adults may be slow to respond to appeals, however thrilling, it's different with children, particularly those of an impressionable age. Indoctrinate them at this period, and the principles learned will be retained for life. Things learned, at school today are discussed at the dinner table tonight. On this premise, the Colorado Springs F. P. Week drive was pointed right at the small fry.

During F. P. Week the firefighters, under direction of Chief Fred Lausch and Assistant Chief Emmett Thurman of the Fire Prevention Bureau, put forth a concerted effort to present an interesting and instructive program at every school. By sounding a signal for fire drill, the children were called out to the playground, where they assembled in a semi-circle.

Members of the F. P. Bureau discussed the need for simple measures to reduce fire hazards in the home. Home inspection blanks were given out to stimulate an orderly search for household fire hazards. Incidentally, a trophy is awarded each year to the school district having the fewest fire alarms. This trophy is displayed to help stimulate group action. Then a fire is kindled in a doll's house; dolls thrown from catapults appear to leap from the windows. A child using a soda and acid extinguisher puts out the fire.

Finally, as a clinching impression-builder, fire apparatus is brought into the school grounds. It's difficult to beat the eye-catching appeal of polished, immaculate, bright red fire trucks. This year the apparatus parade was led by an 1898 steamer, drawn by two horses. Next came a 1000-G.P.M. pumper, then a big 100-ft. aerial. Water was pumped through the booster line; the big stick was elevated and extended, and climbed by nimble firefighters.

These were the highlights, the dramatic part of the F. P. Week drive. Was it worth the time and effort? Ask Chiefs Lausch and Thurman. Or, better still, ask the kids themselves!

Photo by L. L. Williams, M.D.

An old steamer led the fire prevention demonstration at Colorado Springs, Colo.

Fire fighters direct streams into the upper floor of the Hotel Sea Bright during blaze that swept through several hotels and inns in the North Jersey seashore resort.

Asbury Park Press Photo by Dorn

Air view showing wreckage of Charles Manor and burned out Sea Bright Hotel building (right). Stores included two bars, real estate office and post office.

Fire and Storm Damage New Jersey Town

Shortly after midnight, on November 1, the little New Jersey Shore resort town of Sea Bright was hit by a $200,000 blaze that wiped out two hotels, several stores, and the borough's post office. But, as though that wasn't enough, just one week later a disastrous northeast storm hit the Shore, causing millions of dollars of damage to the area and more than half a million to Sea Bright in particular.

The fire, which started in the Charles Manor hotel, raged out of control for more than three hours. Firemen from more than a dozen Monmouth County communities responded to a call for aid from Sea Bright Fire Chief Charles Dillione.

As the fire progressed, nearly two dozen firemen and residents of the wrecked hotels were injured or overcome by smoke, and as a result a county-wide first aid squad alarm was sounded over the Monmouth County Police radio. The injured were taken to hospitals in Long Branch and Red Bank.

The blaze, said to have started from an oil burner explosion, soon raged through the Charles Manor and badly damaged the Sea Bright Inn building. Two taverns and the borough post office were also wrecked by the flames.

Postmaster Marvin Fowler and firemen, using smoke masks and guide ropes, attempted to get into the post office to save mail there, but were driven back by flames and smoke. A temporary post office was set up in the Methodist Church.

Pumpers from assisting companies moved to the nearby Shrewsbury River and at the height of the fire were supplying more than 25 hose lines to firemen at the scene.

Heroic rescues were reported during the battle. Joseph Murphy, a bartender at the Charles Manor, was trapped in the building. Fireman Harold Peters, of Rumson Department, went into the building after Murphy. But, as the flames spread, both appeared trapped. Peters' brother, Edward, also of the Rumson Department, went into the building and pulled both men to safety.

Firemen also rescued Mrs. Elizabeth Cloughly, 90-year-old mother of Olive Packer, a real estate operator with offices in the building. Mrs. Cloughly, an invalid, was carried to safety by firemen.

Five firemen were hurt when a rear roof collapsed, and one fire policeman was hurt when struck by a hit-run driver, as he directed traffic. More than a score of others were overcome by smoke.

For Marvin Fowler, it was the second time he had to move his post office. In 1935, when a fire also hit the Sea Bright building, Fowler, then a post-office clerk, worked to save mail in the blaze.

But, for Fowler, it was trouble again in a week. When the storm hit on Nov. 7, the Methodist Church was flooded and again he had to work to salvage the mail. Extensive damage was done to the borough, as the rampaging ocean and high river tides flooded the area. Firemen and Fort Monmouth and Fort Hancock soldiers worked to evacuate flooded-out residents.

During the storm, a house in Keansburg burned to the water level as firemen were unable to get through flooded streets to reach the scene. All efforts failed as the fire, fanned by a 70-mile-an-hour wind, quickly swept thru the frame house. It was the only fire reported during the storm, tho all fire companies in the Shore area remained on the alert.

FRANK L. WILGUS

New York Chiefs Plan Convention

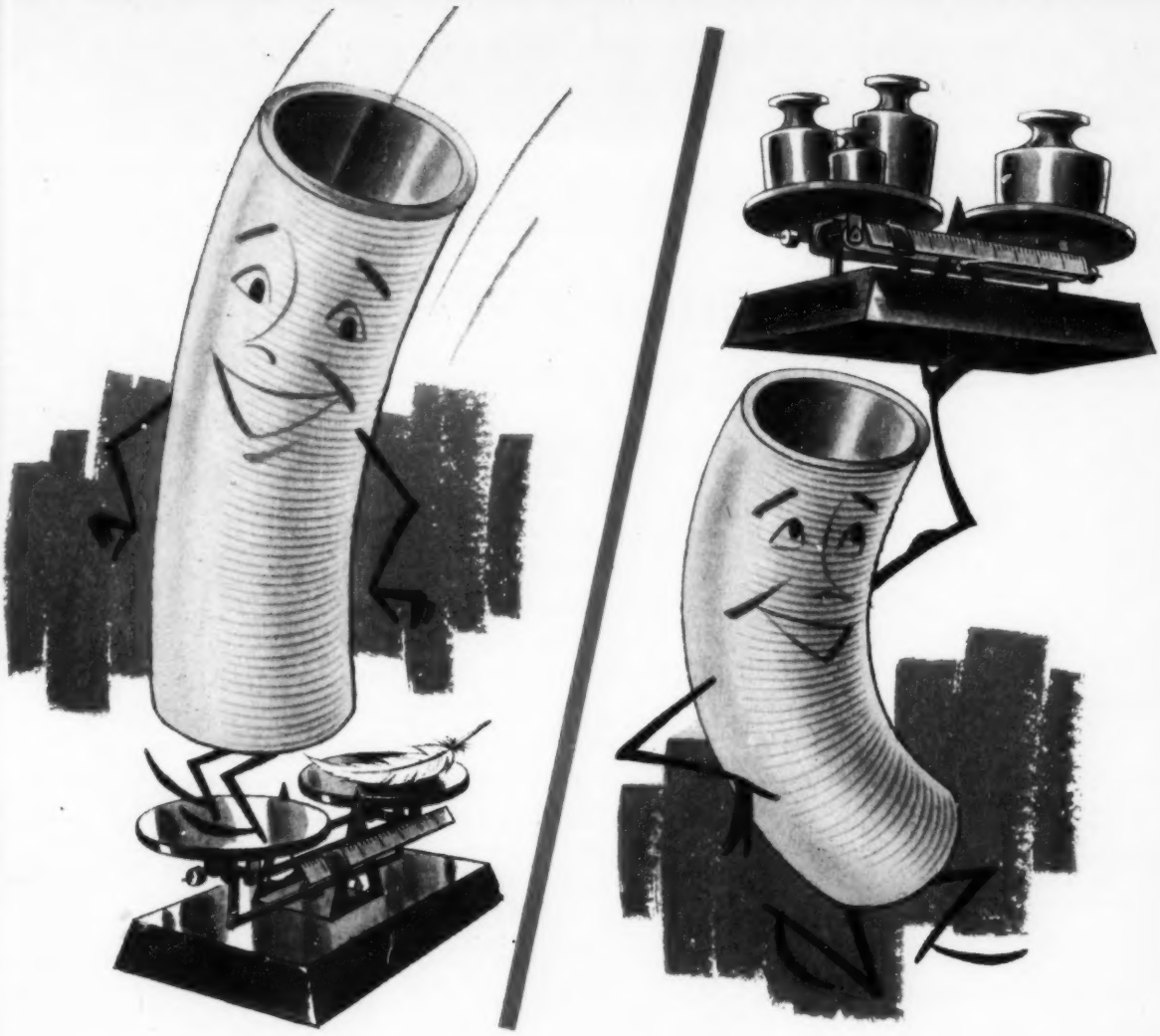
The Convention Committee of the New York State Association of Fire Chiefs, which will hold its three-day annual convention starting June 6 in the Hotel Martinique, New York, met on Monday, November 30, for preliminary planning. The Fire Chiefs were greeted by Fire Commissioner Jacob Grumet and Fire Chief Peter Loftus. Frank W. Kridel, who is an Honorary Deputy Chief in he New York Department, and Manager of the Hotel, was host at a luncheon attended by a score of Chiefs from various parts of the State. This will be the first time that the New York Fire Chiefs Association has held a convention in New York in 47 years. Others present were Howard P. Barry, President of the UFA; Leo R. Barry, Chief of Utica; Ward A. Bohner, Secretary-Treasurer of the New York State Association; Captain Edward C. Finn, President, New York Fire Captains; Lee I. Hunt, Chief of Middletown and Chairman of the Convention Committee; Frank Love, Chief, Painted Post; Charles E. McKeogh, President, New York City Fire Chiefs Association; Edward MacDonald, Chief, White Plains; Clarence Marmour, Chief, Southport; Irving Merrick, Chief, Poughkeepsie; Louis J. Mosher, Chief, Elmira; George L. Swan, Assisant Chief Engineer, National Board; E. Chauncey Niver, Executive Vice-President, New York Board; John T. Oakley, Acting Deputy Chief, NYFD; Laurence J. O'Brien, Commercial Superintendent, ADT; Thomas P. O'Brien, Deputy Chief, NYFD Telegraph Bureau; Martin Scott, Chief Fire Marshal, NYFD; Fred Shepperd, Editor FIRE ENGINEERING, and Roi B. Woolley, Assistant Editor, FIRE ENGINEERING.

JERRY DALY

Detroit Firemen Fete Boston Band

Members of the Boston, Mass., Fire Department band are tooting the praises of their brother blazebeaters of Detroit as a result of the hospitality afforded the band members last September.

Early that month the fifty-piece band, representing Boston's American Legion Post #94, with the blessing of Fire Commissioner Peter F. Cotter, journeyed to the Legion Convention in St. Louis. En route home, the band brothers stopped off in Detroit, where they were given a royal reception and send-off. During their two day visit, they had opportunity to inspect many of the fire houses of the motor city and to see the city itself.



Lightweight...but strong!

Eureka's Vulcan Brand has a jacket of cords that are lighter, stronger than those in standard hose—with *no loss* in burst-resistance.

Vulcan is so flexible you can easily tie it in a knot. It is easier to carry or drag, cuts writhing and whipsawing to a minimum.

As in other famous brands of Eureka Fire Hose, Vulcan's Balanced Weave and Controlled Curing eliminate excessive warping and stretching. Exclusive Formula "X" provides mildew-proofing. "Bomb-Tested" Linings insure long, dependable life.

EUREKA

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875. Specialists in Manufacturing Circular-Woven Cotton Rubber-Lined Fire Hose

195 Hudson Street • New York 13, N. Y.

Division of United States Rubber Company

Short Cuts and Gadgets

TO KEEP SCREEN OFF THE BOTTOM

Comes an idea from John F. Martyn, assistant chief of the Jamestown (N. Y.) Fire Department, which we pass along to the faithful. It has to do with reminding those who would draft in shallow water, to watch out about getting the intake end of the suction hose or sleeve on the bottom. But let him tell it—

"In all training schools," says Chief Martyn, "particularly those devoted to volunteer departments, a considerable amount of emphasis is placed on the importance of keeping the male end, with suction screen attached, off the bottom of rivers, lakes or other sources of water in order that debris of various kinds will not be sucked up into the pump."

"My idea is that some kind of a warning be placed on each suction hose—something like this: NOTE SCREEN—KEEP OFF BOTTOM. It is suggested that this warning be placed on two sides of the suction hose, using rubber base paint, preferably white. It is comparatively easy to have a stencil made and to apply this warning. This procedure is something that can be carried out by paid and volunteer departments."

Thank you Chief Martyn!

* * *

IDEA FOR TWO-PIECE COMPANIES

Companies, with more than one piece of apparatus responding to the same alarm, will help reduce accidents by designating a man on the rear of the first apparatus to signal at intersections to cross traffic. By simply raising his arm, the usual stop sign, his gesture should serve also as a precautionary warning to the driver of the apparatus following.

From WNYF "Anonymous" Jan. 1932.

* * *

ANOTHER HANDY NOTICE CARD FOR VAMPS

From Kenneth Raveling, Chief of the Valley City, N. Dak., Fire Department comes an idea worth forwarding the Faithful.

Chief Raveling writes: Many compliments on your excellent magazine. Notice in the January, 1953, issue on page 43, under the heading of "Short Cuts and Gadgets" the article on the convenient notice form.

"We are not out to establish who first thought of the idea but we find the same idea excellent and we have used it for the past 15 years," says Chief Raveling. "Enclosed find sample of our card, which is not copyrighted and if there is any information in its makeup, anyone is certainly free to use it."

Thanks, Chief Raveling and congratulations to the Valley City Fire Department.

* * *

SHOCK ABSORBER FOR AXE HANDLE

This one is lifted from *Popular Mechanics* of January, 1953, and although the idea is pictured for the commercial axe it seems to us it ought to have possibilities for both the flat head and pickhead fire axes.

In suggesting the idea to *Popular Mechanics*, Henry Josephs of Gardenville, Pa., said: "If your axe handle becomes literally 'chewed up' immediately behind the bit, nail a strip of rubber to the handle at this point. A strip cut from an old auto tire casing is ideal for this purpose (perhaps a bit of old fire hose jacket might do? Ed.)

* * *

LIKES THE "BUTTING BAR"

Another fire chief who cottons to the "butting bar" described in the October "Short Cuts & Gadgets" is Arthur R. Fawcett, of Pelham Manor Fire Department, Pelham Manor, N. Y.

Chief Fawcett writes: "I think some of the Short Cuts & Gadgets articles in Fire Engineering are really great stuff. Assistant Chief John F. Martyn came up with a real good one in the October issue. The title was 'The Butting Bar on Three-Piece Metal Ladders.'"

"I have a fifty and a thirty-five foot three-piece ladder in our truck. Just as the Chief says, the bottom rung is too high for butting. The idea of installing an extra rung five inches from the base of the ladder is the sure way for raising these ladders. It's so simple, just a piece of half-inch pipe threaded on both ends, with a nut on the outside. I had the empty space on the beam filled with a thin piece of sheet metal, 12-guage. Thanks to Chief Martyn and Fire Engineering for the tip."

Thank you, Chief Fawcett.

* * *

MOUNTING INDIAN PUMPS

Many small fire departments carry several Indian pumps mounted on pumper running boards in carrying racks. It would seem these tanks are normally mounted for reasons of appearance with the convex side of the tank facing the public. We sacrificed looks for a gain in efficiency by reversing the mounting so that the form-fitting, ventilated side faces outward. Now we merely unhook the rack straps, crouch with our backs to the pumper, slip into the shoulder straps and we're off, tank and all.—Chief Sydney R. Dobbs, Fairfield State Hosp., Newtown, Conn.

* * *

SMOTHER HEATER FIRES

Oil fires in portable kerosene heaters can be effectively extinguished by smothering with wetted burlap squares, approximately 5'x5'. These squares must be of heavy material. They can be conveniently carried on the truck.

William A. Gimmler, Capt.
H & L 112, NYFD. From
WNYF magazine.

* * *

The Old Timer Says—

There's been a lot o' new gadgets devised to do this and that in the fire service, but s'far as I can see there's never been any better substitute for cleanin' the grit n' oil from threaded hose butts than the "armstrong method"—good old hot water and a clean, stiff bristle brush.

* * *

AN OLD KID'S TRICK IS USEFUL

In winter, firemen of Dubuque, Iowa, fasten their mitts to the end of strings which are threaded through the sleeves of their turnout coats.

When a fireman has to use his bare hands, it is only necessary to slip them out of the mitts, as needed. Whenever he wishes, he can immediately locate and don his gloves. It's better, claim fire fighters, than having to take off the mittens, and stuff 'em into the turnout pockets.

Fire Fighters Let Building Burn

This happened recently at Colchester, Conn. Hurriedly, the Colchester fire fighters got to the blazing storage shed; promptly they set up hose lines; and then they paused. Not for a Coke-amid-the-smoke, but to go into a huddle with on-looking town officials. It was decided to let the place burn down.

This idea of letting the blaze go to blazes was well-founded. In that quick huddle beside the fire—sort of a heated discussion as it were—the fire fighters agreed with the officials that the shed could perish. Let it burn! The building stood on town property, which is set to be the site of a new school.

Some time ago, it had been arranged to remove the old shed, long dilapidated, from the property. Thus the blaze conveniently helped the town to shed a shed, without cost, without trouble.

Tom Magner.

Valley City Fire Department

A meeting of the Valley City Fire Department will be held at the Fire Station at which you are hereby notified to be present.

p. m. sharp.

By order of Chief

Regular
Special
Drill
Uniform
Parade
Funeral
Nominations
Election
Lunch

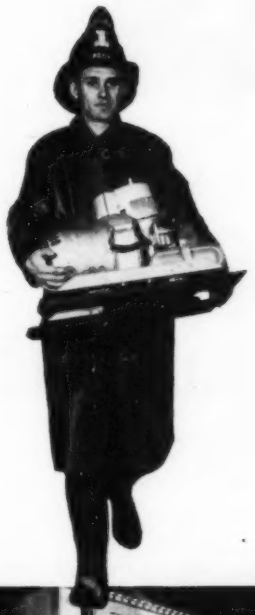
.....

.....

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Jan.	Feb.	Mareh	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

HOMELITE

Carryable GENERATORS

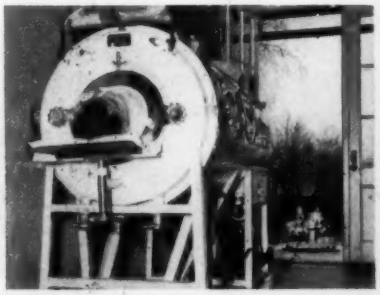


for **Floodlights**
for **Power Tools**
for **Emergencies**

More fire departments . . . large and small . . . use Homelite Gasoline Engine Driven Generators than any other make. And for good sound reasons. Homelite Generators are small and compact . . . take a minimum amount of space on truck. What's more, Homelite Generators are carryable . . . one man puts it quickly, right where you need power. And of greatest importance, Homelite Generators have an unequaled record for performance and dependability under toughest operating conditions.

1. Homelite Generators give you bright flickerless floodlighting any place you need it without long, hazardous and power-reducing cables.

2. Homelite Generators give you power to operate electric saws and other modern power tools that speed work and reduce fire losses.



3. Homelite Generators operate iron lungs, lights, heating plants and other electric equipment in times of emergencies. A must for civil defense.

Write today for our new fire department bulletin entitled *How to reduce fire losses with Homelite Carryable Equipment.* See what Homelite Carryable Generators . . . and Pumps . . . can do for your department.

Manufacturers of Homelite Carryable Pumps • Generators Blowers • Chain Saws

PERFORMANCE · DEPENDABILITY · SERVICE

HOMELITE
CORPORATION

312 RIVERDALE AVENUE • PORT CHESTER, N. Y.

Canadian Distributors: Terry Machinery Co., Ltd., Toronto, Montreal, Vancouver, Quebec.

FASTER

MORE EFFECTIVE... MORE DEPENDABLE

FIRE-STOPPING POWER

MODEL 20-B

ANSUL
Chemical Company
FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN

ANSUL

FIRE EXTINGUISHING EQUIPMENT

FASTER . . . A short, quick downward motion of the puncture lever pressurizes the extinguisher and it is ready for instant use.

MORE EFFECTIVE . . . Even the inexperienced operator gets near-expert results because of the ease of operation and handling. In addition ANSUL *"PLUS-FIFTY"* Dry Chemical has greater fire-killing power.

MORE DEPENDABLE . . . Exclusive ANSUL-ENGINEERED design features include water-tight and corrosion-resistant construction, easy, on-the-spot recharge without special tools and other exclusive Ansul developments which insure greater dependability.

FIRE-STOPPING POWER . . . ANSUL FIRE EXTINGUISHERS have the highest ratings for fire-stopping power ever awarded any type of class B and C fire extinguishing equipment.

Send for File No. B-205. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes — from the small Ansul Model 4 to Ansul Piped Systems and Ansul 2000 lb. Stationary Units.

OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES

ANSUL

PROVIDES THE MOST COMPLETE LINE OF DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT

HAND PORTABLES

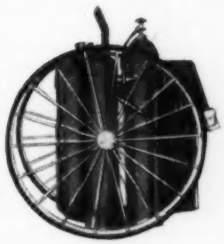
MODEL 4-C

MODEL 20-B

MODEL 30-B

NEW WHEELED PORTABLES

MODEL 150-B



MODEL 350-B

In Ansul's complete line of Fire Extinguishing Equipment there is a model of just the right size to adequately protect nearly every type and area of class B and C fire hazards in, or around, your plant. And, more important, even the largest capacity wheeled portable and stationary equipment by Ansul, is designed for quick, easy, one-man operation.

Ansul Fire Extinguishers are designed for maximum effectiveness even when used by inexperienced employees. They are easy to operate and can be quickly recharged "on-the-spot." No special tools are required for recharging, inspection or maintenance. In addition, all Ansul Equipment is water-tight and corrosion-resistant for longer, trouble-free service.

TRUCK MOUNTS, TRAILERS AND FIRE TRUCKS

MODEL J1-340

MODEL S-2000-B

PIPED SYSTEM

STATIONARY EXTINGUISHERS AND PIPED SYSTEMS

ANSUL
Chemical Company
FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN

MANUFACTURERS OF DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT, REFRIGERATION PRODUCTS, INDUSTRIAL AND FINE CHEMICALS AND LIQUEFIED GASES

THE Chief SAYS

One of Mark Twain's tall stories should have special appeal for every fireman. "There was a fire in Hannibal one night," he said, "and old man Hankinson got caught in the fourth story of the burning house. It looked as if he was a goner. None of the ladders was long enough to reach him. The crowd stared at one another. Nobody could think of anything to do. Then all of a sudden, an idea occurred to me. 'Fetch a rope!' I yelled. Somebody fetched a rope, and with great presence of mind I flung the end of it up to the old man. 'Tie her around your waist!' I yelled. Old man Hankinson did so, and I pulled him down." Well, as I said, that was a tall tale; but I know it's the gospel when BOARDMAN says you're *ready* with a BOARDMAN-Built tanker. We've got one . . . and it's a fine-looking, dependable piece of equipment. Take my word for it, the BOARDMAN tanker, like all of their fire fighters, is engineered and built for long-lasting efficiency, even in the toughest service. You don't *have* to take my word for it, of course — contact BOARDMAN yourself and ask to be convinced.

In the October issue of Capper's Farmer, I read a very interesting article telling why the Beatrice, Nebraska, Rural Fire District is one of the finest farm fire fighting organizations in the country. My battered old Chief's hat is off to those fellows for a job well done. On the opening page of the article, there's a dramatic picture of a costly barn being completely gutted by flames. Looking at that picture, it occurred to me that more than just a fine barn and its contents was missing—a BOARDMAN-Built tanker was missing. And that mobile rural tanker, costing far less than that one barn, probably could have saved it in short order. It has a Waterous pump amidship that delivers 200 GPM at 150 lbs. pressure from draft, and will fight running grass fires while the truck is in motion. Yes, sir . . . BOARDMAN-Built fire fighters are good to have around!

THE BOARDMAN CO.
P. O. Box 1152
Oklahoma City, Okla.

INDEX FOR 1953

The index covering the twelve issues of FIRE ENGINEERING for 1953 will be ready for distribution shortly after the first of January.

It has been prepared primarily as an aid to our many readers who maintain a file of those issues. Your copy will be mailed free upon request.

Boy Bids $5.43 for Fire Engine!

When the Board of Fire Commissioners of Ocean Grove, N. J., the famous New Jersey Methodist seacoast resort, opened bids on their hook-and-ladder, vintage 1912, they found a plea from a Howard Beach, N. Y., applicant reading: "The next town has two fire engine pumpers and I could help them out if I had a hook and ladder."

It all sounded fine until the officials read on and found the bidder was eight-year-old John A. Toomey of Howard Beach, who offered his savings of $5.43.

The boy's bid was "taken under consideration," along with the others, sez the press of Nov. 15, 1953.

Convention Dates

Feb. 23-26—FIRE DEPARTMENT INSTRUCTORS' CONFERENCE. Annual meeting, Memphis, Tenn. Director, Richard E. Vernor, P. O. Box 1089, Chicago 90, Ill.

June 6-8—NEW YORK STATE ASSOCIATION OF FIRE CHIEFS. Annual meeting, Hotel Martinique, New York, N. Y. Secretary-Treasurer, Ward A. Bohner, Fire Coordinator, Oneida County, Fire Headquarters, Utica, N. Y.

June 21-24—ILLINOIS FIRE SCHOOL. Annual meeting, Gregory Hall, University of Illinois, Champaign, Ill. Registrar, Chief Roy W. Alsip, Box 8, Champaign, Ill.

Aug. 15-18—CANADIAN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Saskatoon, Sask. Secretary-Treasurer, Chief Allan H. Clark, Lakefield, Ont.

Oct. 19-22—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting, Houston, Tex. Secretary-Treasurer, Chief Daniel B. Tierney, 8 Robbins Road, Arlington 74, Mass.

SEND IN YOUR MEETING DATES

As a service to its readers FIRE ENGINEERING endeavors to maintain an up-to-date list of all county, state, regional and national organizations and associations in the fire service, and the dates on which their annual conventions are to be held.

Officers of associations are invited to forward the editors, at the earliest opportunity, the roster of association officers, and the dates (actual or approximate) on which conventions are scheduled.

This information will be listed under the heading "Convention Dates."

GLASS* Fire Helmets

Stronger than Steel!

New lightweight champion!

Molded *Fiberglas sets new standards for protection. Resilient construction *absorbs* blows; protects neck & spine.

Naturally insulated against heat. Radiation tests indicate 10% cooler inside. Acid and chemical resistant; non-conductor of electricity.

Greater Comfort: Weighs only 20 oz. Fully ventilated. Headband assembly self-shaping like a felt hat. Adjustable headband; one size fits all heads. Choice of black, red, or white in solid, molded colors. Write to E. D. Bullard Co., 275 Eighth St., San Francisco 3, Calif.

WRITE FOR CIRCULAR

EVERYTHING BULLARD IN SAFETY — HARD BOILED

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Distributors in Principal Cities

Hard Boiled

FIRST Name in Safety Hats—*since 1919*

FALSE ALARMS

Proof

On the witness stand, the old mountaineer was as cool as a cucumber and close as a clam. The prosecuting attorney was beside himself with anger and impatience.

"Sir," hissed the lawyer, "do you swear upon your solemn oath that this is not your signature?"

"Yep," replied the witness.

"Is it not your handwriting?"

"Nope," said the witness.

"Does it resemble your handwriting?"

"Nope."

"Do you swear that it doesn't resemble your handwriting?"

"Yep."

"You take your solemn oath that this writing does not resemble yours in a single particular?

"Yep."

"How can you be so certain?" demanded the irritated lawyer.

"Cain't write," replied the witness.

A safety sign read: "School—Don't Kill a Child." Beneath was a childish scrawl, "Wait for a Teacher."

A job applicant, asked to give his educational background, wrote: "Korea, Clash of '52."

Some people are suffering from cashtrophobia—a fear of high prices.

"What's that man washing his hands so thoroughly for?"

"He's a deaf and dumb guy and he's just finished telling a dirty story!"

If you think you are going to be happy and prosperous by sitting back and letting the government take care of you—take a look at the American Indians.

Substitute

A young teacher substituted for a friend who was taking a week's honeymoon. A month later at a party someone started to introduce the groom to her.

"Oh," he replied brightly. "I know Miss Jones very well. She substituted for my wife on our honeymoon."

Steno Sue: "Where did you get that beautiful diamond?"

Steno Lou: "My grandmother died and left $2,500 for a stone in her memory. Well, honey, this is it."

Judge: Your wife says you keep her continually terrorized.

Prisoner: But, your honor—

Judge (in a whisper): Not in my official capacity, of course, but as man to man—what is your system?

Water?

The Kentucky Colonel drank rather heavily, so the next morning his man John took some ice water up for him. When John knocked at the door the Colonel said:

"Who's there?"

"John," said the man.

"What do you have?" said the Colonel.

"Water," said the man.

"Water!" said the Colonel. "What's the matter, is the house on fire?"

"I nearly ran over a pedestrian a few minutes ago and I think he was from Miami."

"How do you know he was from Miami?"

"Well, when he reached the sidewalk I heard him say something about the SUN and the BEACH."

Impressionist

The gal had over-indulged at the party and as she and her boy friend drove along she had an attack of the DT's.

"Look! Look!" she screamed. "There's a snake crawling up the glass of the car!"

Answered her sophisticated boy friend, "Yah, yah. It's joost vun ov dem vinshield vipers!"

Suffering

A pastor was being entertained at dinner. He was suffering with a boil on the back of his neck, so he wore a soft shirt with the collar unbuttoned. In response to his hostess' expression of sympathy, he said:

"We must endure such misfortunes with patience. I assume that suffering is inflicted on us at times to try us."

The six-year-old daughter of the hostess listened to his remarks and then asked earnestly:

"Well, if you're supposed to suffer, why don't you button your collar?"

No Harm Trying

Bellhop, pocketing 50 cents from departing guest: "Make it a dollar and I won't mention the hotel towels you took."

Guest: "Young man, I ought to have you arrested for making a groundless accusation like that!"

Bellhop: "Fergit it, sir. Nine times out of ten it works."

In a large department store during the Christmas rush, an elderly lady, a little boy and his mother entered an elevator.

"I suppose you are going to see Santa Claus, young man," remarked the operator.

"Oh, no," was the quick response, "we are just taking Grandma to the bathroom."

No Fit

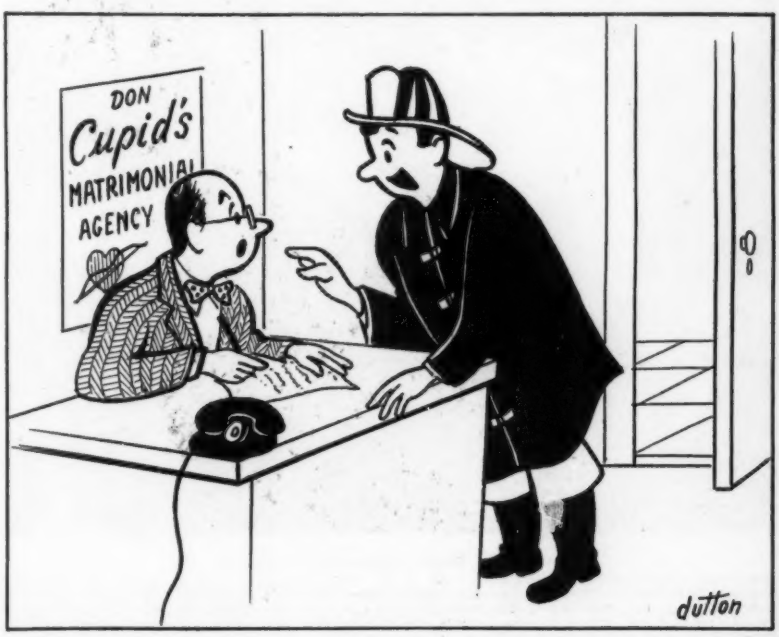
On his first solo run, the engineer brought the train to a screaming halt just short of a tunnel.

The brakeman noted his trembling hands, and queried, "What's the trouble, Mac? Is there something wrong with that tunnel?"

"I may be new at this," replied the engineer, "but any idiot can see that this big train could never get through that tiny hole at the other end of this tunnel!"

Clerk: "Sorry, Ma'am, but Mr. Gotcash has gone to lunch with his wife."

Mrs. Gotcash: "Well, just tell him his stenographer called."



"Look I've got a wife and four kids at home—I'm just trying to tell you this building's on Fire!"

News of the Manufacturers

On-the-Spot Recordings

Miles Reproducer Co., Inc., New York 3, N. Y., has introduced a self-powered, one-unit, combination "briefcase" recorder-reproducer which permits permanent, lengthy sound recordings on-the-spot, ranging up to 4 hours.

The unit, which weighs only 9 lbs. including built-in batteries, requires no external wires or plugs. Recordings can be made in the field, indoors or outdoors, stationary or mobile, riding or flying.

The device is known as the "Walkie-Recordall" and it will pick up and record audible speech within a radius of up to 40 feet.

Deodorant for Elimination of Smoke and Fire Odor

One of the scientific developments which is contributing to reduction of fire losses and to improvement of salvage operations is that of chemical smoke and odor removers. Now comes a new type of deodorant introduced by Thompson Chemicals Corporation, St. Louis 3, Mo., which offers, it is said, still further opportunity for quick, economical elimination or reduction of smoke and fire odor, and consequent reduction in fire damage, and interruption to business.

The chemical, which is called "Odor Fix Concentrate," may be sprayed in the air or directly onto the source of the odor. The concentrate reportedly will not cause stains. According to Dr. Tellef Senum, Thompson research director, the concentrate contains completely odorless deonium and functions like a blotter, absorbing unpleasant smells from the air. Technically, Dr. Senum states the concenrate is a "cationic surface active deodorizer with certain germicidal or baceriostatic properties." It is further claimed for the new product that it kills the odor of chemicals, burning hair mattresses and foodstuffs.

Free samples of Odor Fix Concentrate sufficient to make 5 quarts of solution, the manufacturer advises, may be obtained by writing to the above company and mentioning FIRE ENGINEERING.

Flxible Installs Kohler Plants

The Flxible Company of Loudonville, Ohio, makers of custom built coaches which run the whole gamut of business enterprise, from mobile hardware stores to civil defense and fire department disaster and rescue units, installs Kohler electric plants for the power necessary in most such units.

With the advent of short wave radio, electrically operated tools for forcible entry; for first aid surgery; lighting equipment and for powering sirens, and P. A. systems, the built-in power plant is a 'must' for emergency vehicles, and their users, with the power for every purpose.

Hewitt Makes Changes

Two changes in the sales operations department of the industrial rubber products plant of Hewitt-Robins were announced on Nov. 3 by C. W. Mackett, manager of the department.

Kenneth L. Way becomes the assistant manager of sales operations, reporting to Mr. Mackett. Mr. Way was formerly manager of hose sales and development and previous to that he held other executive positions during a twenty-five year period of service with the company.

Harry Knechtel becomes manager of hose sales and development, succeeding Mr. Way. Mr. Knechtel has been with the company since 1940. He started in the factory and later joined the inspection department. During the war he was a pilot in the U. S. Air Force, rising to the rank of major, and when he returned to Hewitt-Robins he entered the technical department as a hose development engineer.

Automobile Builder Believes in Fire Safety

This small, maneuverable, auxiliary fire truck is an important part of the apparatus guarding the Ford Motor Company's Dearborn assembly plant against fire damage. Here new cars are being filled with gasoline so that they can be driven away at the end of the final assembly line. A Ford fireman removes an exchange carbon dioxide portable extinguisher from the auxiliary fire truck which he will "hang" in a convenient location in this hazardous area. The truck's small size is important, as it can enter doors and areas denied to full-sized trucks. It carries an assortment of portable extinguishers, including two Kidde carbon dioxide 15-pound units which equip it to combat Class A, B, or C fires.

Cold Cathode Fire Box Identification Signal

A new cold cathode identification signal flasher that can easily be attached to any existing fire alarm and police signal box without running additional power supply lines to it is announced by the Haledy Electronics Company, 57 William st., New York City.

New Haledy cold cathode fire and police identification flasher.

Visible for one mile, the flasher consumes only .1 watt and can be adjusted to regulate the flash from 30 to 120 per minute. The cold cathode design reportedly makes for low power consumption. The unit is encased in a sealed weatherproof aluminum box.

While the flasher's prime purpose is to identify fire and police boxes, it also serves as an automatic trouble shooting device for such boxes. It weighs 4 lbs. 2 oz. and measures 4"x3½"x8". For complete information address the above company.

Principals Take Over Acme Ownership

With the purchase of the interests of inactive partners, Acme Protection Equipment Company, Chicago, manufacturers of gas mask equipment, is now owned and operated entirely by active principals in the business, according to an announcement by G. M. Glidden, general manager.

Through these arrangements, it is stated, the partnership is now limited to Mr. Glidden, R. A. Flood, production superintendent, and N. C. Tamandl, purchasing agent and office manager—all of whom have been active with the company since 1946.

"We do not plan any drastic changes in either the policy or operation of the company," said Mr. Glidden, "but will concentrate on continuing improvements in production methods and product de-

(*Continued on page* 1142)

FIGHT FIRES *faster*

With this NEW coupling

NEW

FORGEX®

coupling

PATENT PENDING

ALL BRASS
LIGHT WEIGHT
DROP FORGED
STRONGER

the perfect mate
for your light weight hose

★**LIGHTER** — Forgex Couplings make your tough hose handling jobs easier, faster. They're half the weight of a cast coupling.

★**TAPERED HOSE BOWL** — Forgex Coupling will stay on hose under any pressure. Tested to over 1500 lbs.

★**TOUGHER** — You'll drop and drag your hose and couplings in use. Giant forge presses smash the brass used in Forgex until it's 25% denser. Independent laboratory tests show Forgex up to 100% tougher and stronger than other couplings.

★**UNCONDITIONALLY GUARANTEED** — Every Forgex Coupling guaranteed to give long years of service.

★**AMERICA'S FINEST** — Contains all the features of the Akron Rockerlug Coupling, used by more fire departments than any other.

AKRON BRASS MFG. COMPANY, INC.

WOOSTER, OHIO

The New GA-8 PACIFIC PUMPER

Now in regular service and field tested and approved, the new "GA-8" is showing itself to be another top performer in the famous PACIFIC PUMPER line.

With or without electric starter* the lightweight "GA-8" is especially adapted to tanker use . . . as a portable unit the special sled-type mounting means easy handling in rough terrain. Light enough to be readily carried, the air-cooled, 4-cycle engine develops top volume and pressure for its weight.

The engine and pump are standard Pacific Units and have been fully tested and approved.

Optional equipment.

DIMENSIONS

Length	28¾ inches
Width	19¼ inches
Height	24¼ inches

NET WEIGHT

GA-8 (without starter)	115 lbs.
GA-8-S (with starter)	140 lbs.

PERFORMANCE

Pressure	G.P.M.
50	26
100	24
150	22
200	21
250	20
300	16

Normal operation is 20 G.P.M. at 250 lb. pressure.

PACIFIC "Pacolized" Hose

is a made-to-order partner for all portable or emergency water supply equipment. "Pacolized" Hose is permanently mildew-proof and rot-resistant. Made from "line" flax fibers it is the most flexible hose of its type, lightweight and easy to carry.

Specify "PACIFIC" Pumpers, Hose and accessories. Write for information on the new "GA-8" and the full line of PACIFIC fire equipment, perfected for portability and high performance.

PACIFIC *Marine Supply Co.*
FIRE EQUIPMENT DIVISION
SEATTLE 1, WASHINGTON

The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

RECORDING TELEPHONE AND RADIO CONVERSATIONS

The discussion in this Round Table is a continuation of that which appeared in the November issue on recording telephone and radio conversations.

The generous response from our readers made it necessary to carry the discussion over to this issue.

Readers are invited to send in their comments on this subject or on next month's subject which is described in a box on a subsequent page. Address replies to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Question

F. R. Dimond, Chief, Hutchinson, Kans.: Our department is not equipped with recorders.

These would undoubtedly clarify many disputes and misunderstandings that arise in dispatching companies from excited persons turning in fire alarms.

J. N. Fagan, Chief, Bureau of Fire Alarm and Police Telegraph, Richmond, Va.: The Bureau of Fire Alarm and Police Telegraph is equipped with recorders for recording telephone calls.

We have found the recording of telephoned alarms has proved to be most beneficial to us in receiving and sending the fire department on telephoned alarms. The conversations between the dispatcher and persons involved can always be checked by this office.

John A. Slattery, Chief, Rochester, N. Y.: Our fire alarm headquarters is equipped with a recording device for both telephone and radio messages.

We find it a great help in verifying alarms received from people who are too excited to speak coherently over the telephone.

A permanent record of the voice of the false alarm sender is available for the Arson Squad rather than trusting to the memory of an operator.

FCC regulations require a log of all messages given or received over the radio. The recording is a permanent log and allows the operator that much more time for handling emergency calls which are his primary concern.

This type of recording not only allows us to verify messages between operators and apparatus, but also acts as a deterrent to those inclined to transmit other than pertinent department messages.

Eugene Fields, Chief, Omaha, Neb.: To date, only our radio conversations are recorded, but we expect to record telephone conversations in the near future.

Such equipment affords check-back in the event of a dispute, misunderstanding, improper location given or similar sounding locations, thus calling attention to the fact that a certain procedure should be used in connection therewith.

It would point out habitual complainers, as well as outstanding hazards for reason of volume of complaints pertaining to same. It would supply record of instructions given in the event of misunderstanding or noncompliance, where a letter from division has not been forwarded.

Recording of voice would help in the event the person was apprehended and voice comparisons made, and would establish the general pattern used by those inclined to turn in false alarms.

Such equipment would help cut down superfluous conversation, and would provide a record of instructions given in the event of a dispute. It would also give a check as to the operator's judgment in emergency matters and his knowledge of various sections of a city and the hazards in the same, which, if he is the dispatcher, should be paramount.

Walter G. Strickfaden, Chief, Columbus, Ohio: Our fire alarm headquarters is equipped with recorders.

On several occasions we have had persons call in an alarm and through excitement or otherwise give the wrong address. Later they claimed we were the ones at fault. The recorder proves the exact conversation.

On other occasions we have had false alarms turned in by way of the telephone. With the aid of a psychiatrist listening to the wire recorder, we were able to trace the call and apprehend the offender.

We feel that the recording device is

HERE ARE THE QUESTIONS

1. **Is your fire alarm headquarters equipped with recorder for recording telephone and/or radio conversations?**
2. **In what ways do you feel that recording would prove beneficial to the fire department in connection with telephoned alarms; telephoned reports of fire hazards; apprehending the senders of telephoned false alarms; radio conversations between dispatchers and apparatus, etc.?**

Snuffing out a fire's easy when you have a Kidde carbon dioxide portable handy. Just pick up, point the horn, pull the trigger. A cloud of CO_2 smothers the fire instantly.

Kidde

Walter Kidde & Company, Inc., 1233 Main Street, Belleville 9, N. J.

Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

a practical necessity, for its value has been proven beyond a doubt by the results obtained.

Harold R. Becker, Commissioner of Fire, Buffalo, N. Y.: We record radio conversations only, but plan to install recorders for telephone conversations within the next few months.

Telephone recorders would enable us to check immediately on an address. For example, we have streets in the city that sound the same, i.e., Grey and Bray Streets, Summer and Sumner Streets, etc.

The number of false alarms received via telephone is on the increase, and if we had the recorder we could check on the sound of a person's voice, particularly if a suspect were picked up.

Zephrin F. Drouin, Chief, Lewiston, Me.: We do not have recorders in our department, but believe these are valuable pieces of equipment in checking false alarms or misinterpretations of the sender. We have no radio equipment as yet and are the only fire department in the state without radio mobile equipment. We have been asking for it for the last seven years.

Recording devices are of paramount importance to any recognized fire department, particularly to the fire prevention bureau and alarm dispatchers. We have seen their importance in the past and had we had them, they would have been helpful in court proceedings, in tracing false alarms and clearing the dispatcher on calls on mutual aid wherein fire apparatus was involved in an accident. All modern fire departments should have the vision and broad-mindedness to install the modern facilities available to perfect their work. The police departments throughout the country have accepted these improvements and are receiving recognition from the general public for their work. Why not fire departments?

M. H. Sutton, Chief, Washington, D. C.: We record telephone, radio and vocalarm conversations.

I feel that the recording of telephone calls reporting fires is very important to the fire alarm operator in that it gives him an excellent check on the alarm, as well as a permanent record. He has something to check back on when units report a false alarm after being dispatched. As you probably know, in our city we can have the same address in four sections of the city and often have reports of "no such address." The knowledge that the fire department has recording equipment gets around, and, in my opinion, cuts down on false alarms. For example, we received 2,990 box alarms in the past year, and of that total, 32 per cent were false. We also received 7,902 alarms by telephone and of these 3 per cent were false. So, in my opinion, the records do cut down on false alarms. We have used these recordings in court and have obtained convictions on the strength of the recordings alone.

We make recordings of all messages transmitted and received on our radio system. These are acceptable to F.C.C. for their record.

Recordings are also made of all messages over our Vocalarm.

All of the above recordings are timed, dated and filed. I feel they are a "must" for fire department emergency communications. They give you a "true" record.

C. N. Penn, Chief, Dallas, Tex.: At present our fire alarm headquarters is not equipped with a recorder of any kind. However, the police department does make a recording of our radio conversations.

A recording of both our telephone conversations and radio conversations in our own fire alarm office would be beneficial to our fire department. At this time whenever we want a playback of our radio conversation, a man has to be sent to the police department to get it. It would tend further to eliminate the possibility of error, and should an error occur, the responsibility could be put on the right party. Also, it sometimes happens that a citizen will report an alarm and give improper information and later complain about the inefficiency of the fire department in responding. It would be a positive check on any and all conversations and would greatly aid when an investigation has to be made.

Michael H. Lotz, Chief, Engineer, Baltimore, Md.: Recorders are used for radio conversations.

Telephone conversations are not recorded, but we believe they should be in order to conform with Paragraphs 209-10 of Pamphlet No. 73 of the National Board of Fire Underwriters.

Recording of telephone alarms would be beneficial in case of doubt as to the correct location given. We do not believe that recording of reports of fire hazards is necessary, or that it would aid in apprehending false alarm senders.

BAR-WAY COUPLINGS...

For booster and high pressure fog lines

There are four good reasons why the fire fighters specify BAR-WAY couplings. Four reasons why BAR-WAY couplings are growing in favour with firemen, hydraulic engineers and others who insist on the best.

- **SAFETY**—The coupling becomes the *strongest part of the hose line*. Tested to 3000 pounds pressure and 500 pounds pull.
- **FULL FLOW**—No suppression of flow in coupling. No shrinkage of hose at coupling.
- **FLEXIBILITY**—Reels smoother. Easily replaced. Nothing to catch on corners or underbrush.
- **BETTER MADE**—Accurately machined, always the same, interchangeable. WILL NOT FAIL.

Send for our free pamphlet. Gives detailed specifications for all types of pressure hose, ID and OD.

BAR-WAY MFG. CO., STAMFORD, CONN.

WEST COAST REPRESENTATIVE | W. D. BIGDON, 383 Brannan Street, San Francisco 7, Calif.

With regard to radio conversations, as the Federal Communications Commission requires log sheets or recordings which must be filed for at least one year, the recording of conversations relieves the operator of keeping a log sheet.

Howard Dey, Chief, New Orleans, La.: Our fire alarm headquarters is equipped with recorders.

Alarms received over telephone recording machines are beneficial for registering conversations between the caller and the fire alarm office as to correct location.

Such equipment is beneficial in recording telephoned reports of fire hazards. As for apprehending the senders of telephoned false alarms, I don't see how you could apprehend anyone for telephoning a false alarm, whether it is recorded or not.

It is also beneficial for recording radio conversations between dispatchers and apparatus as once again a permanent record proves who is right.

Steve Taylor, Chief, Boise, Ida.: We do not have recorders at the present time, but they are in future plans.

I feel that a recorder in connection with subjects mentioned in the discussion would practically eliminate all doubt. Verbal conversation and statements are easily changed or forgotten where there is no recording made. Only last week I had such an experience. By the time all parties were brought face to face, some of the statements were denied and the rest of the conversation was worded in such a way that very little was accomplished.

Louis R. Spandle, Director, Fire Department, Kansas City, Kans.: We haven't a recorder now, but are exploring the possibilities of installing one. We believe it would help in double-checking all telephone alarms as to address and number. We also believe it would increase the alertness and courtesy of our PBX operators.

E. L. Surfus, Chief, Eugene, Ore.: We do not have recording equipment in our fire alarm headquarters.

In the case of telephoned alarms it would be a means of checking an incorrect address and might even be a means of understanding an incoherent conversation. In reporting hazards, it would give the exact conversation, due to the fact that so many so-called fire hazards are neighborhood quarrels. In apprehending the senders of false alarms, it might give a clue as to who was sending repeated false alarms in. However, proving the sender with the voice would be difficult. It could be very valuable for keeping a log on radio messages and also prove arguments as to wrong addresses or statements. It would also be a help in keeping the dispatchers on their toes with the public, namely, to be courteous and to quiet down excited persons sending in a telephone alarm.

On the other side of the ledger, it is quite an expensive piece of equipment for the few times that a mistake might occur. The larger cities could well afford this high cost, but the smaller town that has to rely completely on telephone alarm systems cannot very well afford this cost.

Ellis J. Bauer, Chief, Santa Fe, N. M.: We do not have recording equipment in our department.

Santa Fe has no call boxes. All

City of Los Angeles pumpers built by Crown Coach Corp. are equipped with WATEROUS pumps.

Los Angeles is hard to please

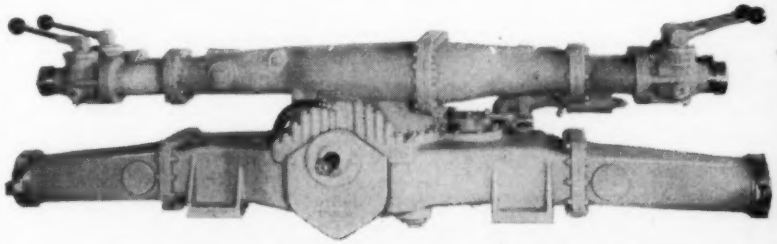
● Only five fire departments in the United States have earned a Class One rating from the National Board of Fire Underwriters. The Los Angeles Department is one.

How did Los Angeles qualify for such recognition? By the outstanding efficiency of its equipment, personnel and operating procedures . . . by leadership in equipment design . . . by writing rigid specifications for each piece of equipment it purchases.

It's no wonder then, that new pumpers built for Los Angeles are WATEROUS-equipped . . . in this case, with 1250 GPM centrifugals. Other cities, too, have found that there's a big difference in fire pumps. Across the nation, alert specification writers are now demanding that the pump body be built in two horizontal sections so the entire impeller assembly (including wear rings) can be removed without disturbing the setting of the pump in the chassis.

They ask, too, that the impeller shaft be supported at each end by oil-lubricated, anti-friction ball bearings that are *completely* protected from water by oil seal, flinger, and packing . . . another important WATEROUS feature.

If *you* are in the market for new pumping equipment you'll find "Preferred Fire Pump Specifications" very helpful. For your free copy, write WATEROUS COMPANY, 40 East Fillmore Avenue, St. Paul 1, Minnesota.



Model DCD 1250 GPM

Waterous

DEPENDABLE PUMPS

SINCE 1886

alarms are given by telephone. I believe that a recording device would be beneficial in being able to check back on conversations when erroneous addresses or other information are given when alarms are placed. Also it might be of some help in apprehending senders of false alarms by determining whether or not the same person is placing false alarms.

George A. Engler, Chief, Rapid City, S. D.: We are not equipped with recorders at present.

Such equipment would help to place the responsibility of a mistaken address in answer to fire calls.

It would help an operator at the station to more quickly redirect the fire apparatus by radio in case an error was made in receiving the fire call at the station, in not having to wait for the telephone company operator to contact the party sending in the call to again give the address of the fire.

I believe it would be a big help to record all telephone conversations that have a bearing on the operation of the inspection bureau of the fire department with local building and fire hazard reports and recommendations to individuals seeking such information by phone.

John Krusenklaus, Chief, Louisville, Ky.: Our fire alarm headquarters is not equipped with recorders.

This will be YOUR BUSIEST EQUIPMENT

REGARDLESS of the size of your department, this Sharpsville Challenger will do a tremendous job. It is capable of handling fires alone, saving runs by the larger, expensive equipment. It can be equipped as a general service pumper and for emergency and life-saving work. A Volunteer Department will find it fits their needs admirably, while the large Municipal Department will find it fast and easy to maneuver in traffic, an ideal "first-alarm" pumper. The water supply, the maneuverability, and ease of operation make it practically self-sufficient. This body, designed for a commercial chassis of your choice, has a hose bed and large side cabinets for carrying a wide range of equipment. It can be equipped with a booster tank up to 1,000 gallons, with a pump of your choice. Let us send you complete details. Write today.

SHARPSVILLE STEEL FABRICATORS, Inc.
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ALSO BUILDERS OF STORAGE TANKS, SERVICE, CRASH AND LADDER TRUCKS, VOLUME AND HIGH PRESSURE PUMPERS.

This equipment places responsibility for accurate reporting and receiving of all fire alarms.

If a person is apprehended turning in a false alarm, a recording of his voice might be used as evidence in court.

It would all eliminate all question of accurate report of radio conversations between dispatchers and apparatus.

V. L. Crusinberry, Chief, Sioux Falls, S. Dak.: At the present time we have no recording equipment.

A recording would be a quick check on addresses in case of a mistake by the dispatcher as it could be played at once. People suspected of sending false alarms could be interviewed on a recorder and their voices compared. It would help in apprehension.

No doubt the recording of all conversations on telephone and radio would have a tendency to make everyone more careful and efficient in transmitting. You have a definite check-back on everyone involved.

A. F. Papenhagen, Chief, Toledo, Ohio.: At the present time we do not have recording equipment.

I am of the opinion that such equipment would be of great value to the department.

Only too often have there been discrepancies in the information from the sender to the fire alarm operator. Many departments have been sent to the wrong address, this later being denied. If the conversation had been recorded, the record could prove the point.

Wayne E. Swanson, Chief, Rockford, Ill.: We have used recorders in the Rockford Fire Department for about four years and have found them to be very beneficial. We are using the recorder only on telephone calls, but expect to install another later on for use on the radio system. We are using the same type of tape recorder that the radio networks use for recording programs.

The only recording that we do is of conversations pertaining to fires or fire hazards that come into our telephone PBX Board on the fire telephone lines.

We have found recorders to be a protection for the fire alarm operators in the cases of persons giving confused address and hanging up the phone before the operator can understand clearly where to send fire companies. We have been able to apprehend many and secure confessions for sending in false alarms.

We just recently secured a confession from a pyromaniac who was apprehended and sentenced to ten years in the penitentiary for committing arson, where the recorder was the important factor in establishing the fact that he called the fire department. Test calls made by him were identical with those made when he called the fire department the first time.

In my opinion, the recorder is one of the best protectors that the fire department can have to establish what is said over the communications system.

H. A. Davis, Chief, El Paso, Tex.: We are not equipped with recorders for recording telephone and radio consersations.

It is obvious to us that such equipment would be beneficial to the fire department inasmuch as it would pro-

HERE ARE THE QUESTIONS FOR THE NEXT ISSUE

1. Does your department maintain a 24-hour house watch?
2. If so, how long does each member of the company stand watch: (a) day watch; (b) night watch?
3. If no night watch is maintained, how does your system work in regards to alerting companies at night?
4. Has the method you employ worked out satisfactorily?
5. Any suggestions for its improvement?
6. Is your fire department paid or volunteer?

vide a double check on alarms received or verification of telephone reports of fire hazards, etc.

Donald S. Charles, Chief, Charlotte, N. C.: Our fire alarm headquarters is equipped with recorders for recording both telephone and radio conversations.

We have found the switchboard recorders to be invaluable in clarifying garbled or incomplete messages and in establishing the correct location of an emergency in instances where there is similarity in street names.

The recording discs on the radio recorder are labeled and filed as a Federal Communications Commission log. The operators are then relieved of the necessity of making a written log and can give their undivided attention to the operation of the fire alarm and radio equipment.

Our experience with this equipment has been such that we would unhesitatingly recommend its use in all fire departments.

Thomas M. Lane, Chief, Alameda, Cal.: Our department has been using a wire recorder for recording voice conversations by telephone for the past seven years and expect to include our radio next year. This will not be a wire recorder, but a two-circuit tape recorder by which certain vital messages either telephone or radio can be recorded from the tape recorder to a separate record and the tape can be demagnetized and used over and over again.

Recordings have proved beneficial to our department in checking the type of public relations procedures our department employs and the way they respond in the receipt of messages and dispatching of apparatus and other emergency calls. They have also proved beneficial in checking voices for tracing calls for false alarms, checking for incorrect addresses, etc. We also use them for cultivating correct language by allowing the members to hear their own voices as others hear them. We have also used these transcriptions in working up reports for hearings in courts and for other purposes establishing whose voice reported and the information received as to the type and extent of the fire.

IF YOU'RE "ON THE FENCE"
ABOUT THE BEST FIRE EQUIPMENT . . .

CHOOSE

INDIAN FIRE PUMPS
"THE ONE MAN FIRE DEPARTMENT"

Now available with either 4 or 5 gal. tank. All seams electric welded — no leakage.

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Read what this user says:

"We have been using a dozen of your ***INDIAN FIRE PUMPS*** *for the past four years. Eight of these are used in connection with our fire fighting equipment covering woodlands and four are used at our sawmills.*

It is remarkable how quickly these pumps can be brought into service in an emergency. Their action in extinguishing fire is fast and complete and we gladly recommend this equipment to anyone who might have need of their use."

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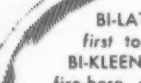
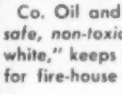
There's no such thing as "almost safe"— to be SURE... Bi-Lateral!

To be safe at *all*, safety must be absolute! Cheap hose is expensive in the long run—in lives as well as money! Bi-Lateral doesn't compete to see how *cheaply* hose can be made, but how to give the city or village the *most* for its money in *safety* and *long-run economy!*



BI-LATERAL was *first* to construct hose with the bi-lateral non-creasing feature for longer life, lower cost in the long run and true safety. Folds flatter, handles more easily!



BI-LATERAL was *first* to change the pin-lugs to rocker lugs for safer, easier-handling couplings, lower-cost hose coupling maintenance.

BI-LATERAL was *first* to offer a real detergent, BI-KLEEN — made especially for fire-hose cleaning exclusively for Bi-Lateral by the Essentials Chemical Co. Oil and dirt rot hose—*Bi-Kleen* is *safe, non-toxic,* keeps hose "inspection-white," keeps it cleaner, safer . . . good for fire-house and apparatus, too!

AND BI-LATERAL was *first* to furnish free fire hose record cards to fire departments. They are *still* available — send for a supply!

"When you buy with your conscience, with safety and economy in mind, you'll BI-LATERAL!"

Bi-Lateral
FIRE HOSE CO.
20 N. WACKER DRIVE
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The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

T.V. Fans See Chicago Firemen in Dramatic Action

Television fans all over the nation saw drama flashed on their screens, bringing the operations of Chicago firemen right into their homes.

While Mrs. Millicent Armin, 36-year-old divorcee, teetered on a 20th-story ledge of the Tribune Tower, threatening to jump, and firemen and others labored to drag her to safety, operators of television station WBBM-TV, not far away across the Chicago River, used a telescopic lens to bring the dramatic scene into closeup focus.

They saw Mrs. Armin on a ledge of the building, with men on the roof, and a fire marshal and priest endeavoring to lure her to a window with her dog, which had been brought to her in a last-ditch effort to prevent her jump. They witnessed, finally the woman caught by Fire Marshall James R. Hughes and the Rev. Robert Herne, while firemen held the two inside the room into which she was hauled.

The woman, who was taken to a police station for psychiatric treatment, eluded her father and ran into the building, which faces busy Michigan Blvd., and took an elevator to the floor where she climbed from a window. She was on her perch an hour and 35 minutes, while thousands of spectators crowded the streets, gaping at her, and firemen and police sought to dissuade her from jumping.

The televised scenes of the drama were picked up by Columbia Broadcasting affiliates in other cities and ultimately were retelecast throughout the country.

Rev. Herne was summoned by Mrs. Armin's father and both pleaded for her to re-enter the building. Failing in convincing the woman, Mr. Armin rushed to his home and returned with Mrs. Armin's dog who was offered her by the priest. As she took a step or two toward the window, the Marshal and priest grabbed her.

* * *

Boston Firemen Set Test Blaze—It's "Brutal"

The Boston Fire Department answers some 15,000 fire alarms per year, but it seems it is a glutton for punishment. On Sept. 27 last it deliberately made some additional work for itself by setting fire to a North End building—all in the line of duty, of course.

The touch-off was a four-story structure which was about to be razed and was occasioned by the desire of the department to try out some new fire fighting techniques.

Fire Commissioner John Cotter called it a "splendid exhibition," but coughing, weeping firefighters described conditions within the "demonstrator" building as "brutal." They complained that the fire, fed by barrels of flammable material, had been allowed to get too big a start. Too much "preburn" in a word. They hinted that exploding smoke bombs and ammonia escaping from pipes did the throat and lungs no good. One fireman was cut by glass.

Consensus of opinion among the 40 or more Brothers who tackled the blaze was that it gave them more trouble than the usual nonstreamlined run-o'-the-mill blazes.

* * *

Coals to Newcastle?

Firemen at Garden City, L.I., fire headquarters had a chance to do some real "home work" on fire fighting without leaving their quarters, one Monday morning, recently.

Come the fall, they usually get ample experience in treating balky oil burners in their village, but its the first time on record that they had to operate on their own heating system, which backfired and quickly charged the building with that gooey, sticky, and generally nasty carboniferous smoke which usually does more damage than the fire.

Headquarters personnel on duty at the time, reinforced by a few vamps who had arrived a bit early for the regular monthly meeting of the department, scheduled for that evening, jumped into action and tackled the fire with hand extinguishers; they had it out before it could spread. Smoke from the burning oil-soaked insulation, however which spread throughout the building, did no good!

Thanks, Dr. N. V. Cooper.

* * *

Hot Off the Tape

The N. Y. State Liquor Authority has said it will not "authorize the sale of damaged alcoholic beverages under any circumstances." . . . In Honeoye, N. Y., a justice of the peace blamed a pig's bed-warmer for the loss of his house. The dwelling was destroyed by fire with loss of $18,000. The justice said he had placed an ailing piglet in a basket of straw on the back porch. An electric light was suspended over the basket for warmth. It is believed the heat from the light fired the straw, which in turn fired the house. The justice and his wife escaped in their nightclothes. Would you head this "A dissertation on roast pig?" . . . The city editor of the Plainfield, N. J., *Courier-News* lifted the telephone to find out where the fire engines he heard in the street were heading. He never completed his call. The engines stopped outside his office. Uh huh, fire was in the newspaper's pressroom. . . . In Martinsville, Ind., the City Council decided against insuring its new $14,000 fire truck because the "other driver" would always be liable for failing to yield the right-of-way. You guessedit—while the apparatus was on an emergency run it was damaged $3,000-worth in a collision with anoher vehicle—the city's only police car! . . . Helen Searles, 18, the girl who pressed a lighted cigarette against a Binghampton, N. Y., deputy sheriff's neck when he tried to arrest her stepbrother for motor vehicle violations, was ordered by the justice of the peace to attend church every Sunday for six months. . . . One week the pay checks of the Chicago firemen were "fire engine red." Seems the city controller's office got too much red ink into the check machine, and the normally pink checks came out as red as the controller's face. . . . In Tuckahoe, N. Y., the police and

nre departments were called upon to help de-odorize the Eastchester High School. Fire Captain William Blackie went into the basement and came up with a dead skunk. Police used a "chemical" on the polecat but to no avail. Then they called for the blazebeaters—and masks!... It doesn't seem possible, but a mother and four children sleeping in the back of a truck died when the vehicle caught fire as it rolled along the highway near Plainview, Tex. The father and a teen-age-son in the truck cab escaped with minor bruises. . . . In the "it-doesn't-seem-possible" category, add this one about volunteer firemen of Midway, Ill., suburb of East St. Louis. They have to pay admission to get to some fires. Their district is cut in two by Grand Marais State Park. The state not so long ago began collecting a 10 cent fee from everyone entering the park, including firemen. That's why the Midway vamps began collecting a fund to make dimes part of their standard fire fighting equipment. . . . In Dunkirk, N. Y., construction was started on a fire station which had been under consideration for some time. The fire department purchased a pumper and found it wouldn't fit in the old firehouse. . . . In Warwick, Va., as his fire truck rolled to a flaming structure, Fire Captain J. R. Bateman recalled that seven years ago when he answered an alarm on this paricular street, it was his father's house afire. When he pulled up to the fire—it was again his father's home. It burned to the ground. . . . Out Cripple Creekway, fire destroyed a truck and its load of insulating material. The material was labeled "fireproof." . . . In Jamestown, N. Y., F. J. Spoto used a broom to put out a rubbish fire, then stowed the broom in his garage. Why go on? . . . This comes from Cincinnati, O., where one Thomas Gibbs outraced a fire that started when a leaky gas tank on his "hot rod" spilled fuel on the highway and a loose bumper dragging behind ignited it. Gibbs stepped on the accelerator and kept going until he ran out of gas. Fire Captain Harry Stull said Gibbs was "the first man I ever knew to outrace a fire." . . . In Garden City, Kans., the vamps rushed to the station house when the fire alarm sounded. Cars pulled over to let the trucks by. But the trucks didn't go by. They never got started. Police and firemen couldn't get the doors open. Just as the drivers decided to ram the dors with their apparatus, a "never mind" call came through. The fire in a parked car was out. . . . In Rome, N. Y., Fire Chief William M. Campbell's hair was singed when the gas furnace at his home backfired as he tried to light it with a newspaper. . . . Ten-year-old Geraldine Kissling was awakened by the sirens of the fire rigs coming to fight a fire near her home. She went to her bedroom window in the family's fourth-floor apartment on Madison ave., Manhattan, looked out—leaned too far, and plunged to the alleyway pavement. She died en route to the hospital. . . . In Shenandoah, Ia., firemen were rushed to the home of Fire Chief Jack Funk to put out a blaze. It was the first day of Fire Prevention Week. (Thanks, Fred W. Kurth.) . . . In Martinsville, Ind., after the city council decided against insuring its new $14,000 fire truck because it would "always" have the right of way, the fire truck hit the town's only police car, was wrecked.

DEADLY *Sub-basement Fire . . .*

. . . MEANS ANOTHER CALL FOR

Scott Air-Pak
(TRADE MARK)

because fire in any unventilated area consumes the oxygen in the atmosphere and produces deadly, invisible gases. ONLY self-contained breathing equipment provides safety in such oxygen-deficient areas. SCOTT AIR-PAK supplies cool fresh air for breathing freedom and protects the eyes from irritating smoke. There's no fogging of lenses to restrict your work inside a burning building. SCOTT helps you fight fires faster . . . safer.

That's why thousands of Fire Departments are using SCOTT AIR-PAKS . . . You're safe when you're wearing a SCOTT.

Your Scott Distributor will gladly give you a FREE DEMONSTRATION.

WRITE TODAY
. . . for full details on Scott Air-Pak Safety Breathing Equipment in Bulletin 510.

Scott Air-Pak (above)—½ hour minimum duration at extreme exertion. Weight as worn 29½ lbs.

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Canada: Safety Supply Co., Toronto — Branches in principal cities
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Questions and Answers

Drafting from Hydrant

To the Editor:

Can a person draft from a hydrant with a fire pumper?

Does atmospheric pressure always have to be present when you are drafting? P. L.

Answer: If a hydrant is attached to a main which is completely closed off at the far end, it will not be possible to draft water from such a hydrant.

On the other hand, if the hydrant is attached to a main which is part of the system, and somewhere in the system there is an opening at which atmospheric pressure can reach the water in the system, then the pump can draft water from the hydrant, provided the vertical distance between the pump and the surface of the water in the system is not too great. A fire pump in good condition should be able to lift water 25 feet vertically.

You will appreciate from the above statements that atmospheric pressure is necessary to make it possible to lift water by draft. The pump merely reduces the pressure within the hydrant, and the atmospheric pressure on the outside forces the water up in the hydrant barrel, through the suction hose and to the pump.

Of course, if there is pressure in the main, sufficient to cause water to flow from the hydrant outlet, and this pressure is maintained, the pumper can take suction from the hydrant. But this is not ordinarily considered "drafting."

Discharge from Nozzle

To the Editor:

Referring to your column in the July issue on finding nozzle pressure and flow. In the third problem you use the formula that follows:

$$29.7 \times 3 \times 3 \times \sqrt{25} \times .9$$

and state the result is 722 gallons per minute. We use the same formula and get 1,203 gallons a minute and therefore get a different final answer.

J. C.

Answer: We were in error in the solution which was given in "Questions and Answers" in our July issue.

The answer is 1,203, as you have determined, rather than 722 gallons which was our answer. Apparently we are forgetting how to use a slide rule.

Spontaneous Heating

To the Editor:

In the question and answer section of the October issue on spontaneous heating, you answered the question as follows:

"Drums of linseed oil are subject to very slight spontaneous heating.

"Drums of turpentine are subject to low spontaneous heating."

According the N. F. P. A. tables of materials subject to spontaneous heating, linseed oil is listed as high;; turpentine as low and linseed as very slight.

Would appreciate your straightening me out.

F. R.

Answer: Linseed oil is subject to severe spontaneous heating in the presence of certain fibrous materials. But when contained in drums (assuming that the drums are closed) the danger is very slight.

You will appreciate this when you realize that the heating of linseed oil is caused by oxidation of the oil. If the air is kept away from the oil, oxidation will not take place, and there will therefore be no spontaneous heating.

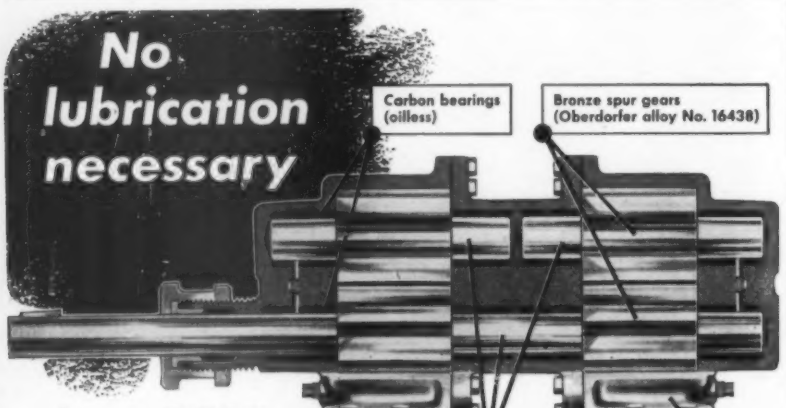
The table you have reference to has been checked, and apparently the author of that table had in mind the spontaneous heating of linseed oil when in the presence of air, plus fibrous materials. The fibrous materials expose a larger surface of the oil to oxidation, and thus intensify the spontaneous heating.

Bursting Pressure in Pipe Lines

To the Editor:

In your August, 1953, issue, there is a very excellent article on the fire and explosion hazards of gaseous fuels, by Allen J. Johnson.

In this article there is one statement that I don't quite understand. It is the first sentence of the first paragraph in the third column on Page 639, and I quote:


No lubrication necessary
Carbon bearings (oilless)
Bronze spur gears (Oberdorfer alloy No. 16438)
No. 26 Pump
Piston-finished stainless steel shafts
Bronze housing (Oberdorfer alloy No. 741)

the new
OBERDORFER
BRONZE BOOSTER PUMPS

These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

LIST PRICES — No. 26 — $200.00 No. 13 — $90.00

Slightly higher west of Rockies

FIRE PUMP DIVISION, Oberdorfer Foundries, Inc., Syracuse, N. Y.

"In a 16-inch line operating at 750 psi the bursting pressure for each linear foot is 72 tons."

Using the formula found in the "Handbook of Fire Protection," 10th edition, Page 1361, I arrive at a figure of 36 tons.

The formula is as follows:

t (tension in shell lbs. per inch of length of cylinder) equals ½ d x p, where "d" is diameter in inches and "p," the pressure inside the cylinder in pounds per square inch.

Substituting our figures above, we get:

$$t = \frac{16}{2} \times 750, \text{ or } 6{,}000 \text{ psi.}$$

A linear foot would be 12 times this figure or 72,000 pounds. 72,000 ÷ 2000 pounds (the number of pounds in a ton) would give us a final figure of 36 tons, the bursting pressure for each linear foot.

Which is the correct bursting pressure 72 tons or 36 tons? Did Mr. Johnson use a different formula?

J. P. M.

Answer: The calculations given in the "Handbook of Fire Protection" for tension in the shell of a tank under pressure are correct.

Thirty-six tons per lineal foot is the correct tension.

Apparently Mr. Johnson differentiated between bursting pressure and lineal tension. If we assume he had in mind the total force exerted toward ripping the tank completely in two, his figure of 72 tons would be a proper one.

You will note that he states, "As the only force in opposition to this bursting are the two sidewalls of ⅜-inch," etc. Thus he has figured in the two sidewalls rather than one sidewall as is done in the Handbook. The tension per lineal foot on the sidewall is 36 tons, hence the tension per lineal foot on two opposite sidewalls would be twice as much, or 72 tons.

Thus each author is correct from the standpoint of the assumptions.

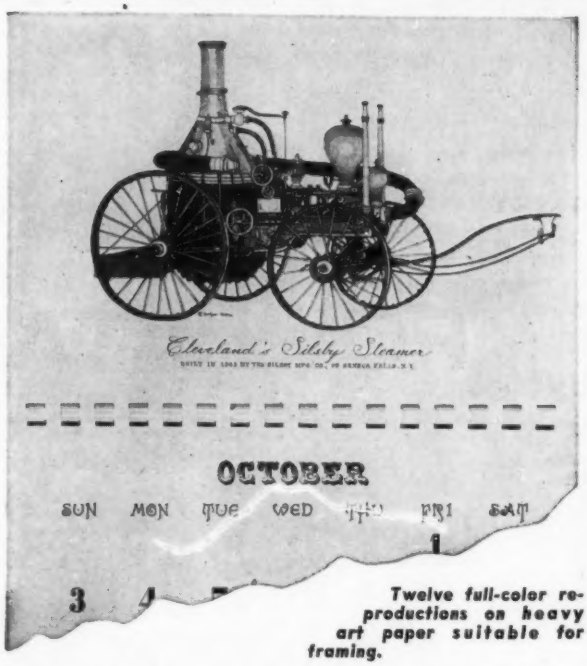
Pumper Performance

To the Editor:

We have a 2-stage centrifugal Class A pumper rated at 1500 GPM at 150 pounds engine pressure and 2560 rpm. We had two single lines off, each line being 100 feet long of 3-inch rubber lined hose, branched into two multiversals, each with a 1¾-inch nozzle. The pumper, connected to a hydrant with 85 pounds hydrant pressure (residual pressure 65 pounds) was pumping in pressure position at 175 pounds (nozzle pressure was 60 pounds) and with a reading of 2400 rpm on the tachometer, approximately.

1. In pressure position, under the above circumstances, could the engine give more than 175 pounds? If not, why not? Would nozzle size be a factor?

A CENTURY OF FIRE ENGINES



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2. What is discharge under the above conditions?

3. Would capacity position of the pumps be preferable for a good working stream?

4. What would discharge be if working at capacity?

5. When operating a 2-stage centrifugal pumper in pressure position, and you change from parallel operation to series operation, the discharge capacity is actually the capacity of one stage; in our case, therefore, 750 GPM. Now then, how do you account for the fact that at 200 pounds engine pressure, our apparatus is expected to deliver 70 per cent of its capacity when it must pump in pressure position to get up to 200 pounds?

C. R.

Answer 1. The engine could not give 175 pounds pressure without the help of residual hydrant pressure. A pressure of 175 pounds at the engine would mean 92 pounds approximately at the nozzle, and the discharge from each nozzle would be 872 gallons per minute, or a total of 1,744 gallons per minute.

The nozzle size is a major factor. If the nozzle size were reduced to bring the flow down within the limitations of the pumper at 175 pounds, then you would be able to maintain such a pressure at the engine.

Answer 2. Given above.

Answer 3. "Capacity" position of the pumps would be preferable for operating under these conditions. If operated at 150 pounds engine pressure, the nozzle pressure would be 83 pounds, and the discharge from each nozzle would be 828 gallons per minute, or a total of 1,656 gallons per minute. The pump might be able to maintain the 150 pounds if it were helped by a good hydrant pressure. At any rate, even without the help of hydrant pressure, the nozzle pressure on the two streams would be satisfactory for production of good fire-fighting streams.

Answer 4. This is answered in the answer to Question 3.

Answer 5. The power of the engine is a major factor in the performance of the pumps at different pressures. Where we have a pump pressure of 150 pounds, and are discharging 1,500 gallons per minute, the water horsepower equals 150 × 1,500 ÷ 1,714, or 131 horsepower approximately.

When operating at pressure, we have an engine pressure of 200 pounds and a discharge of .70 × 1,500, and the water horsepower will then be 200 × .70 × 1,500 ÷ 1,714, or 122 horsepower approximately.

Atmospheric Pressure

To the Editor:

In the August, 1953, issue of FIRE ENGINEERING, on page 670, it is stated that "two atmospheres would be 39.4 pounds." I believe this is an error in printing.

CAPTAIN ROBERT M. MALIN
Hq. 85th Air Depot Wing
Box 96
A.P.O. 207, c/o Postmaster
New York, N. Y.

Answer: You are correct. But the fault lies not with the printer, but with the Editor. Twice 14.7 gives 29.4 instead of 39.4. Calling our attention to this error is appreciated.—Ed.

World Wide Fire News

By Roi B. Woolley

Fates Were Kind in This Instance, Also!

Just to show that once in awhile the Fates are kind, this incident is worth recording. It happened on the same day as another near-disaster, also in Indiana, on the outskirts of Logansport. And it concerns one William Holmes, 32, who was arrested and charged with driving a truckload of gunpowder while under the influence of liquor.

The police nabbed Holmes on the 16th, as his truck was encountered weaving across the highway just outside Logansport, with a load of black gunpowder from Kingsbury Ordnance Plant, on its way to Ravenna, Ohio.

Readers can write their own caption for this "near-miss."

* * *

Navy Continues to Have Fires

A fire swept the waterfront of the Mare Island Navy Yard at Vallejo, Calif., on Oct. 4th, destroying a Navy tug loaded with cable and gas cylinders and barge, a tug office, several other buildings and part of a pier.

Two firemen were reported injured, neither seriously, and a sailor broke his wrist and arm when he fell between the pier and a submarine alongside.

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The fire was near the submarine base where several submarines are in mothballs, but no damage was reported to the vessels. No report of loss was forthcoming nor has the cause of the fire been released by the Navy. Independent estimates run the damage as high as $2 million.

The blaze, which was fought by three Navy fireboats and 12 pieces of fire apparatus from the Base and Vallejo, already had a good start before it was discovered. A huge, thick black cloud of smoke rose high into the air and attracted thousands of onlookers from as far as 15 miles away, who lined the nearby Vallejo causeway and the surrounding hills.

* * *

A Near-Miss in Indianapolis, Also!

Another city to narrowly escape disaster was Indianapolis, Ind. On Sept. 17th, last, almost 12 tons of detonator fuses exploded and scattered pieces of an ammunition transport truck for 1,200 feet on Indiana Highway 100 near Nora, about 5 miles north of the Indianapolis ctiy limits. Fortunately, in this episode nobody was killed and only one fireman, from Indianapolis, suffered injuries. Damage, outside the truck, was also light.

The blast tore down six spans of 33,000-volt high tension power lines and shattered windows in the vicinity, the concussion being heard as far as fifteen miles away.

The driver of the truck, aged 41, told State Police that he had smelled smoke and found a fire in the semi-trailer. He failed in a hurried attempt to disconnect the tractor, then ran on foot about 300 feet and jumped into a roadside ditch just as the fuses exploded.

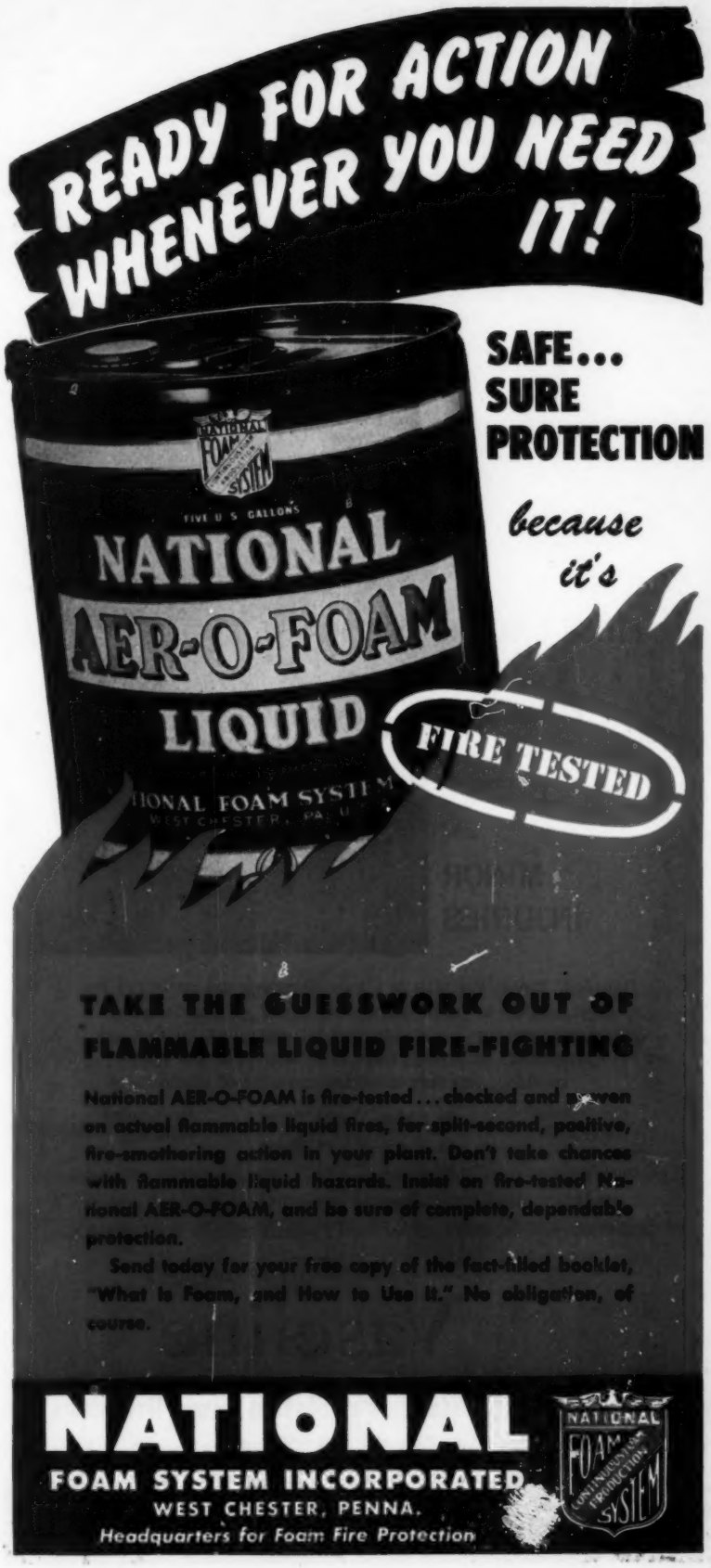
The explosion blew in the inner half of a double glass picture window in a near-by residence but the housewife, who was lying on a couch at the time, was unhurt.

It was not disclosed where the fuse cargo was being transported.

* * *

From the World News Ticker

The Federal Trade Commission announced that the Carnival Toy Manufacturing Co., of New York, had agreed to stop calling its plastic Christmas tree icicles "fire resistant"—they weren't. . . . A 13-year-old Martinsburg, W. Va., boy and his nine-year-old brother admitted they had tried to kill their father with a home-made dynamite bomb because their father was "mean." The boys encased a stick of dynamite in wax, with a detonator cap, and soaked the contraption in kerosene. They then placed the "bomb" in the father's ash tray where they hoped burning ash would set off the blast. The older boy was sentenced to an industrial school until he is 21, the younger placed on parole with his parents. . . . A 5-alarm fire on Nov. 5th, in the records building at the Fort Snelling military installation near St. Paul, Minn., destroyed more than 300,000 G. I. insurance claims. . . . The $750,000 tug "Salvage King," heroine of many sea rescues on the British Columbia coast, sank after a fire in the harbor of Victoria, B. C., Oct. 19th. . . . A fire on Oct. 13th in the basement of the Quai D'Orsay, Paris, France, where archives dating back hundreds of years are stored, was quelled by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firemen who flooded parts of the basement. . . . More than 5,000 Japanese-made Hallowe'en masks, of celluloid and considered highly flammable, were confiscated by the fire marshal's office in Philadelphia. . . . In Malton, Eng., Nearula, winner of the 2,000 Guineas Classic race and the Championship Stakes, was led to safety after a fast-spreading fire threatened his Yorkshire stable. Hard working water-throwers of a hastily formed bucket brigade managed to keep flames from the Elsey Stables until major fire fighting equipment could arrive. The fire extensively damaged the headquarters and riding school of Capt. C. F. Elsey and threatened Nearula and 11 other thoroughbreds. . . . Following the ammunition truck-automobile crash near Boyestown, Neb., just outside Omaha, in which three persons were killed, the City Council of that municipality voted to prohibit trucks carrying explosives from Omaha's streets, beginning Oct. 20th. Truckers immediately picketed the City Hall in protest. . . . For two and a half hours on Sept. 25th last, 100,000 residents of Nuremberg, Germany, cowered in emergency air raid shelters while demolition experts defused a two-ton blockbuster bomb dropped by the Allies in World War II. . . . The Macao firecracker industry, the largest business of Macao, Portuguese Colony, sputtered and died Sept. 26th when five factories shut down because the United States will not permit firecrackers to be impored. . . . Eleven persons were burned to death and at least 12 others injured in an explosion and fire in a plastic factory in Bombay, India. Firemen rescued 40 trapped when the fire spread from floor to floor. . . . Fire broke out in an assignment of cotton in the hold of the American freighter James Lykes as the 6,671-ton vessel approached Liverpool inbound from New Orleans. Fire-tugs rushed to the ship and the fire was reported later controlled only after two British firemen were overcome in the hold. . . . In Bologna, Italy, employees of a candy factory were so busy selling Easter eggs that no one noticed the factory was on fire until the flames reached the retail counter. . . . In Offenbach, Germany, a workman's pants exploded at the gas works. Officials said gas seeped up the trouser leg of a welder and was ignited by his torch. He received minor burns. . . . Speaking of Portuguese fireworks, nine persons were killed and about 70 injured on Sept. 14th last, in a fireworks explosion during an annual feast at Vila Real, that country. A stray rocket landed in the house where the bulk of the fireworks were stored. The victims were reported trapped under debris when the house collapsed. . . . A furniture factory in the Midlands city of Birmingham, Eng., blew up on Aug. 25th, last, killing two persons and injuring 12. . . . Five fire units hustled to the dock where the Canadian Pacific liner Empress of France was berthed, in Liverpool, when smoke was seen coming from one of the decks. Investigation disclosed trouble was an electric fault in the forward peak of "B" deck. Firefighters returned, heaving a sigh of relief. . . . A balloon carrying four persons exploded at an altitude of 8,000 feet near Siegen, Germany, late in August, dropping all four to their death in the village of Littfeld. . . . A fast spreading fire destroyed 50 huts in a fishing village near Hong Kong on Sept. 1st, last, leaving 300 homeless. . . . A 41-year-old soldier was killed when his faltering plane crashed ino a house and burned on Sept. 30th near Phoenix, Ariz. He was killed less than two miles from the airport from which he had taken off. The plane ripped through telephone wires and against the home of a married couple and their 10-year-old boy who were watching TV at the time. The boy was slightly injured by flying debris. . . . In Vienna, Austria, Franz Pasta, 50, a volunteer firemen, was sentenced to three years in jail after he admitted setting fire to a barn to see if his younger colleagues really could do their stuff. . . . A fire virtually destroyed the gold-mining town of Unutuluni, Bolivia, killing one person, injuring 15 and leaving 3,000 homeless, it was reported on Sept. 12th. . . . The explosion of two Japanese shells on Sept. 25th last killed five Filipino laborers in Manila who were trying to dismantle the missiles for powder. . . . Ten persons were killed and 27 injured in an explosion and fire at the municipal fuel dump at Kars in northeast Turkey, according to reports dated Sept. 23rd. . . . When a spark touched off an explosion in a small fireworks factory in Palermo, Italy, on Sept. 23rd, last, two persons were killed and six seriously injured. The factory was demolished and several buildings in the vicinity were burned. . . . A delayed report from Manila states that 3,000 persons were left homeless when a 7-hour fire wiped out more than 300 homes in the little town of Matalom on the southwest coast of Leyte, 67 miles south of Tacloban. Damage to the town of 17,000 was estimated at $500,000. Cause of the fire not determined. . . . Two persons were killed

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in a blast which blew out a wall of a second-floor apartment in the center of Geneva, Switzerland, at noon on Oct. 31, last. About 20 neighbors and pedestrians were hurt. . . . In Lucknow, India, student demonstrators set fire to three postoffices and two telephone relay points when a curfew was relaxed for two hours on Nov. 2 last. Since the curfew was imposed on the 1st, 314 persons were arrested for defying it. Two days of rioting followed the forcible hospitalization of two students on a hunger strike.

Among the Buffs

By Paul C. Ditzel

THIS being the time of Santa Claus, I dispatched a query to some of the buffs up in Eskimoland and they sent back the exclusive news to this column that fire fans are again in good shape this year.

For those of you who want to be most up to date, I'll suggest an "Old Fire Engines" calendar for 1954. Probably the best way to describe it is to go into it obliquely. Many firemania collectors know the pen-and-ink sketches of Evelyn Curro, a San Francisco artist who is best known for her cable car and old locomotives calendars.

Now, The Viking Press, 18 East 48th St., New York 17, N. Y., has just published a 1954 calendar with full-page drawings—6½ inches by 8½—of the old machines. This series of accurate and well detailed colored prints is spiral bound and the calendar sells for $1.75. Better try the larger book, stationery and department stores for this item.

As for me, I'm just a kid-at-heart (aren't we all, Oswald Pompier asks) and I'll be looking for the scale model oldtimers kits put out by Jack Robinson of the Marlin Toy Company, 1186 Broadway, New York 1, N. Y. Although only three models are reportedly on the market today, I understand three more are about due. These plastic models are simple to assemble and are not expensive.

Models already on the shelves of toy departments and hobby stores include a chemical and ladder; a hose reel and a double pump steamer. Look for these to follow: a hook and ladder, water tower and an aerial ladder. These models are the best I've seen for newspaper people like me whose thumbs get in the way when I try to ape experts like Capt. Thomas Showers of the Los Angeles County Fire Department. Of course, you can always tackle one of William Lowe's horsedrawn equipment kits. I took on the steamer in that series and although I finished it some months later —I've never been the same since!

For those of you outside the newspaper business—and consequently have it to throw away—you can invest in a new radio. It would take too much space to outline some of the models now on the market, but I understand from Buff Gene Burt that there's one now that covers the high frequency bands in the 30-40-mc range and also the 152-162 spread. Don't write me for the info, however. When it comes to radios, I'll stay on the sidelines.

Finally, there's an assortment of fire-

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mania jewelry, including tieclasps, brooches and the like.

If you're literary-minded, you might ask Santa to drop off a copy of Paul Kearney's excellent new book, "Disaster on Your Doorstep." It's published by Harper's and should be a part of every fan's library—that is if he's as interested as I am in preaching the gospel of fire prevention.

Which reminds me that Paul Kearney stopped off in Los Angeles recently to gather material for a magazine article. There's nothing that I can add to the familiar saga of this No. 1 national author of fire stories. But as for his dainty wife, she told me that while she's no avid firefanette—she probably knows almost as much about the science of fire as her famous husband. Mrs. Kearney operates a gift shop but occasionally finds time to take in a working fire with her husband down New York way.

Guess it's superfluous to mention that I'm a fireboat fan, and while we're on the subject of Santa Claus and things red, I'll pass along this anecdote from a British correspondent who sent an account of fireboating a la Russian:

"One of the most interesting trips I ever made in a fireboat was in August, 1937, when . . . we steamed up the Moscow Canal to the point where it joins the Volga. Early in the morning, the chief officer of the Moscow Fire Department, a commissar of colonel's rank, took us in a big open Minerva car. . . . The drive was completely hair-raising. The chauffeur, a very expert driver, took us along at between 60 and 70 miles per hour on roads which weren't in good shape. There were three things which seemed to incite him to accelerate: a pedestrian, a right-angle bend in the road (an opportunity for a masterly skid turn), and lastly, pot holes. The only life lost on the journey was that of a white cockerel. I can see him now, lying in the middle of the road, a miniature snowstorm of feathers descending over him, his legs stretched towards the heavens as if crying out for vengeance against his killers. He had paid the penalty for under-estimating the speed at which a commissar travels.

"Slightly shaken by our nightmare drive, we embarked on the fireboat, a vessel some 40 feet long, capable of doing 12 to 13 knots and travelled 30 miles along the canal. I confess, I was a little surprised when, close to us on the river bank, a man standing with a group of women divested himself of his clothes and for some minutes stood about gossiping in the warm sunshine before taking a swim."

Letter from Jim McCall, 4713 N. Paulina St., Chicago 40, Ill., indicates he'd like to trade pictures of Chicago fires with all comers. Jim, who says he's a fan at Squad 4, tells the story of the squad returning one night from an inhalator call. They paused for a stop light. Ahead of them was a car which didn't move even after he light changed.

"The firemen began to become impatient," Jim writes. "Then they noticed the car was engulfed in smoke. They grabbed a hand pump and ran to the car."

The driver had been driving with his emergency brake on.

Until next month, then the address is again changed, but this time permanently. The Ditzels — Colette, baby Denise and myself, are moving in our own permanent home at 419 Napoleon St., Playa del Rey, Calif. I'm still laboring as labor writer at the Los Angeles *Daily News*, Los Angeles 54, Calif.

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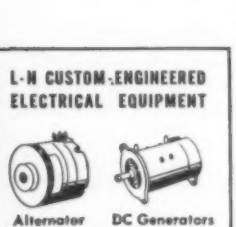

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Obituaries

Chief Don Kelley Laid to Rest

Fire Chief Donald J. Kelley of Burlington, Vt., who died October 29th last at the age of 49, was given an impressive funeral in which the entire local fire department joined with numerous out-of-town fire officials and others to pay him homage.

Chief Kelley entered the Burlington Fire Department in 1924, and in 1931 was promoted to chauffeur. In 1939 he was advanced to second assistant chief and three years later to first assistant. In 1942 he was named executive officer, or acting chief, in which capacity he served until Chief Charles Lavery returned from service in the U. S. Navy.

Upon the latter's retirement in 1949, Kelley was promoted to chief of department. He was known for his progressiveness and under his direction the department adopted two-way radio, the latest in respiratory protective equipment, water fog and other improvements. The chief was active in the Chittenden County Fire Figher's Association and he was a member of the International Association of Fire Chiefs, the New England Association of Fire Chiefs, the Vermont State Firemen's Association

and numerous other civic and fire service organizations.

Acting Chief Edward G. Duball was named chief to replace Chief Kelley.

Chief Duball joined the department Maarch 25, 1924. He was promoted to lieuenant Dec. 9, 1939, and to captain Feb. 1, 1947. He became second assistant chief Jan. 15, 1949, and first assisant chief Dec. 3, 1949.

Duball, who handed in an application for retirement about a year ago, withdrew it at the request of Mayor J. Edward Moran when Kelley became ill.

Warren E. Seagrave Dead

Warren E. Seagrave, 78, son of Frederick E. Seagrave, inventor of the first automatic hoist aerial ladder truck in this country, and founder of the business which bears his name today, died in Port Huron, Mich., after a long illness.

Mr. Seagrave is survived by a son, Norman O., president of Port Huron Sulphite & Paper Co.; a daughter and four grandchildren.

Persons in the News

Lobue Named Houston Chief

Joe Lobue was appointed Chief of the Houston, Tex. Fire Department Nov. 4th, last. At 38, he becomes the youngest man in the city's history to wear the top fire fighter's helmet.

He ran to fires and became a fire department mascot long before joining the department in 1938. Outside a 3-year-hitch in the Navy he's indulged his lifelong ambition to be a fire fighter, ever since. He was a fixture at Engine 12, across the street from his Dad's grocery store.

Lobue was appointed to district chief last April and promoted to deputy chief in September.

Dr. John Gerletti to Join I.A.F.C.

Dr. John Gerletti, of the University of Southern California, Los Angeles, Cal., will take over the duties of General Manager of the International Association of Fire Chiefs on February 1, 1954.

He succeeds James E. Jagger, who tendered his resignation early this Fall.

Fire Chief "Makes" Magazine Cover

Men famous in world affairs, politicians and even entertainers have "made" the covers of national magazines in the past, but we believe the first fire chief to attain that distinction is Chief Harold A. Shippey, of the Westport, Conn., Fire Department.

It all happened through the brainchild of Stevan Dohanos, of Sturges Highway, Westport, one of the best known artists in the country. Mr. Dohanos, a great friend of the Westport firemen, wanted to give his son, Tony, the thrill of a lifetime—to sit at the wheel of the Westport apparatus.

Artist Dohanos brought Tony to the Westport station, sat him in the driver's seat and asked Chief Shippey to stand by while the famous artist made a sketch of little Tony and the fire chief. Later he included himself in the drawing which

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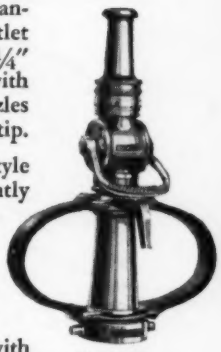
No. 900

No. 912

No. 900. A 2½" Shut-off Nozzle with play-pipe, complete with ladder hook and swivel leather handles. All brass body. Tip outlet can be furnished from ½" to 1¼" diameters. Shown equipped with No. 911 Plain Tip, but all nozzles are available with any Buckeye tip.

No. 902. A 2½" New York Style Shut-off Nozzle with permanently attached play-pipe. Also shown equipped with No. 911 plain tip. Can be furnished without brass swivel handles and without tip, if desired.

No. 912. A threaded type tip with protective ring. There's a Buckeye nozzle tip for every purpose.



No. 902

These Buckeye Nozzles are part of the finest line of nozzles ever developed. Just how well they are designed, just how carefully they are constructed is amply demonstrated by the loyalty of Departments the country over.

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Illustrated Literature and Specifications on Request

THE ROWLAND COMPANY, Box 448, Sand Springs, Oklahoma

graced the cover of the Nov. 14 issue of the *Saturday Evening Post*.

The cover scene is Westport's Central fire station, but the pumper, a 30-year-old American LaFrance, has been retired from active service.

TOM MAGNER.

Chief Ludie Croom Undergoes Operation

Fire Chief Ludie Croom, of Wilmington, N. C., suffered amputation of the right leg on October 13, at James Walker Memorial Hospital in Wilmington, in an attempt to remedy a circulatory disorder. The veteran fire fighter's leg was severed between the knee and hip.

He is reported to have survived the operation in good shape, and is "doing fine" on the way to recovery.

Chief Croom participated in the program of the International Association of Fire Chiefs at Toronto, Ont., in September, at which time he appeared in robust health. The onset of his ailment was sudden.

G. R. Traver Leaves N.B.F.U.

George G. Traver, manager of the public relations department of the National Board of Fire Underwriters, New York City, has resigned effective December 31 of this year, according to announcement made by L. A. Vincent, general manager.

Mr. Traver joined the staff of the National Board November 1, 1944. During the period that he has been manager of the public relations department, the current program has been developed and the public relations expanded and built up to its present state of effectiveness.

V. J. McLaughlin Made Honorary Battalion Chief

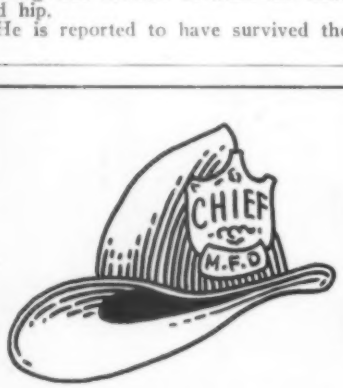
Vincent J. McLaughlin, Ph.D., was appointed on November 13 an Honorary Battalion Chief of the New York Fire Department by Fire Commissioner Jacob Grumet with approval of Mayor Vincent R. Impellitteri. Chief McLaughlin was assigned as Training Consultant and Educational Advisor at the Fire College. Last February he read at the New York Fire College a paper "The Essentials of Management and Supervision." It made a hit and attracted serious attention at HQ.

Vincent J. McLaughlin

It is planned to add Dr. McLaughlin to the faculty of the Fire College. Presently he is the Administrative Officer and Chief of Naval Research responsible for the formulation of administrative policies and procedures for efficient operation of research programs for 400 projects in 85 universities and organizations embracing a research value of $80,000,000.

Dr. McLaughlin is 39, a native New Yorker. He holds B.A., M.A. and Ph.D. degrees from Fordham University, 1936 to 1949. He has taught at Manhattan College School of Engineering and the School of Arts and Sciences; lectured at the Fordham School of Education; served as Assistant Professor at the College of New Rochelle; and as Instructor at the Delehanty Civil Service Institute, New York City.

A member of the R.O.T.C. at Fordham, in 1936 he was commissioned a Second Lieutenant and was awarded the Collins Sabre for proficiency in military history. He was the Educational Research Officer of he War Manpower Board; Manpower Survey Officer for the First Army on Governor's Island with the rank of Captain; Chief of Personnel Control for the First Army; awarded the Legion of Merit by the War Department for his contribution to management of Army manpower; Distinguished Service Medal from the State of New York for outstanding service during World War II. He was relieved in 1946 with the rank of Lt. Col.



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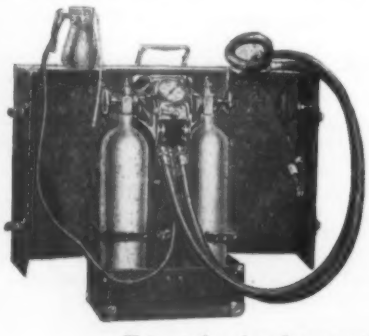

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Chief McLaughlin's management training experience includes Army and Navy; Consolidated Edison; Board of Higher Education; Cornell University and the New York Fire Department.

Prof. McLaughlin has addressed the top brass of the N.Y.F.D. on such topics as supervision; organization; human element and the job; physical characteristics and appearance; ability and aptitude; training; environment; home conditions; common characteristics of men; common differences of men; mental abilities; personality; motivation; discipline; use of orders—written, direct and implied; how to handle a subordinate; factors involving morale; etc.

The official order of his appointment contains this by Fire Chief Peter Loftus —"All members are directed to cooperate and assist Dr. McLaughlin in his assignment."

JERRY DALY

Chaplain Morton Honored

Norris T. Morton, Chaplain (Major) USAF and Staff Chaplain, AFFTC, Edwards Air Force Base, Edwards, Calif., was presented with a fire department badge on October 26, 1953, at Command

Brig. General J. S. Holtoner, Edwards Air Force Base, Col. (right), presents a fire department badge to Chaplain (Major) Norris T. Morton, Staff Chaplain at Edwards (center), on behalf of the Commanding General and the Chief of the Elmendorf Air Force Base Fire Department in Alaska. Looking on (left to right) are Lt. Col. Henry W. Yagel, Base Fire Marshal, and Fire Chief Howard P. Crews, at Edwards Air Force Base.

Headquarters, Edwards Air Base, on behalf of the Commanding General and the Fire Chief at Elmendorf Air Force Base in Alaska. The presentation was in recognition of Chaplain Morton's work in fire prevention during the two years he was assigned to the Alaskan Air Command.

A letter of appreciation from Command Headquarters accompanied the badge.

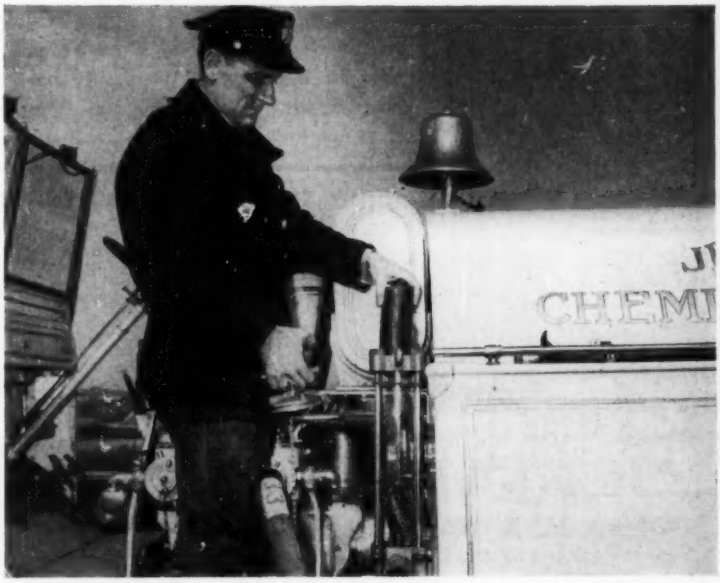
Fire Protection Rating in Philadelphia Raised

Philadelphia's fire protection rating has been raised from Class 4 to Class 3 by the National Board of Fire Underwriters, city managing director Robert K. Sawyer announced recently.

The report by the board "shows clearly that by the end of next year the city would be back to Class 2 where it was in 1948," he said.

Based on a survey made last June, the report showed a 31 per cent over-all improvement in the facilities measured by the underwriters' committee on fire prevention and engineering standards. The fire department showed a 51 per cent gain in efficiency.

Jersey City Fire Department Demonstrates Pyrodyne "Wet Water" System



Fireman inserts a Pyrodyne cartridge in a Pyroblender cylinder attached to a chemical truck of the Jersey City, N. J., Fire Department. The device, which takes up no more space than a 2½-gallon extinguisher, automatically mixes the Pyrodyne compound into the water stream, producing the most effective "multi-phase wet water" solution in fire fighting history. Highly praised for putting out stubborn, deep-seated fires, it is guaranteed non-corrosive.

The Pyrodyne system reduces smoke and water damage, gives the deepest possible penetration with a minimum degree of runoff. It does not require a storage tank, is ready for instant use, and needs no cleaning between fires.

One of Pyrodyne's biggest assets is its economy. The solution costs less than 2/3 cent per gallon and the Pyroblender is the lowest cost proportioner on the market.

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NEOPRENE IMPELLERS—Pump dirty water as well as clean water—assure long life

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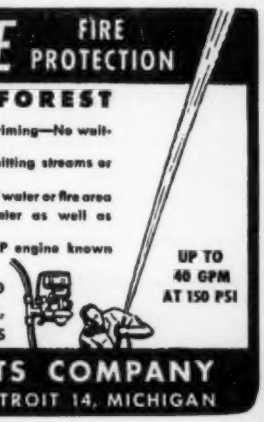

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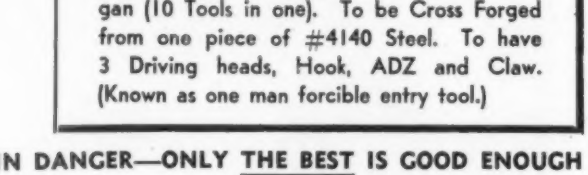

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Contact Attwood regarding the manufacture of equipment to your specifications.

ATTWOOD BRASS WORKS

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Controlling Natural Gas Fires

(*Continued from page* 1100)

day. The casing only was producing at the time of the fire with a flowing pressure of 1550 psi and a gas-oil ratio of 1550 cu. ft. per barrel. When the fire was discovered, only two ½-in. valves were open but, as it progressed, flanges expanded and spread permitting gas and oil to leak. Extinguishment was first attempted with simultaneous use of two Model 150-A wheeled extinguishers, foam and water without success. Five hours after the fire was discovered another attempt was made. The concensus of those present was that the wellhead was continually leaking a greater amount and that only one more attempt at extinguishment could be made. Two water hose lines were played on the fire until the signal was given to move them and then an attack was made using five 150 lb. wheeled extinguishers simultaneously. One minute later the fire was extinguished. The water hose streams were again turned on the wellhead, which was spraying oil and gas, while workers went in to tighten flanges and close valves. The flow of oil and gas was then stopped by pumping mud, and the well was "killed."

The second report involved a well being drilled. There was a blowout and a spark caused ignition. The derrick collapsed and was pulled away, as were the pumps, engines, and the substructure. The first section of the casing was removed, which placed the casing collar about 26 ft. below the surface. The clearing operations required five days, during which time the water and gas flowing from the well produced a crater about 26 ft. in diameter. Gas flow as estimated at 7,000,000 cubic feet per day. On the fifth day, six 150 lb. wheeled extinguishers were placed around the crater. The area was cooled for about one-half hour with water streams. The six extinguishers were then used simultaneously and the fire was extinguished without difficulty.

Fire Alarm Systems

(*Continued from page* 1098)

reasonably free of stress and strain, an alarm may be reported rapidly and in more detail.

(4) Provides the exact location of the fire to which firemen are to proceed.

(5) Permits the person who sends the alarm to remain at the scene of the fire to render assistance if necessary.

(6) Gives the fire alarm operator definite information as to the character and location of the fire.

Note: The editors would add to this statement that, under certain conditions, the telephone provides some clue to the sender of the alarm.

That the telephone in the home and place of business is not suitable as the sole means of calling the Fire Department is indicated by the following:

(1) Telephones are not available in all areas, and particularly in the poorer residential section.

(2) Telephones are inaccessible at night and on holidays in commercial districts, and generally inaccessible to pedestrians in residential areas from 11 P.M. to 6 A.M.

(3) Foreign language population and phonetic errors cause confusion, errors and delays.

(4) Emotional people do not give understandable or intelligent reports.
(5) A coin for a dial telephone may not be available.
(6) Person calling may dial improperly.
(7) Lack of cooperation by party line subscribers delays emergency communications.
(8) Telephone Company personnel may route calls improperly.
(9) Strikes of Telephone Company employees may cripple service.
(10) Likeness of street names have caused many mistakes in response of apparatus.
(11) All trunk lines between Central offices are "busy" at certain times of the day (and multiple calls such as eventuate with large emergencies, jam the service.—Ed.).
(12) Fires in the structures (and on the highways.—Ed.) often put the telephone out of service or make it inaccessible.
(13) Night fires, especially smoky ones, require quick exit for safety, and neighbors cannot be awakened easily to get to a telephone. (Also occupants have difficulty in using a phone in smoke and gas-filled areas.—Ed.)
(14) During, and after, hurricanes (sleet storms and other emergencies. —Ed.) telephones in large areas may be out if service for a considerable period of time.

It is apparent that telephones cannot be used in the poorer residential areas where none exist, the survey-report continues, and also that they are inaccessible in most residential areas between 11 P.M. and 6 A.M.; also telephones cannot easily be reached at night or on holidays in commercial districts.

Some Pertinent Questions Answered

The survey-report states that in March a letter was written to the Louisiana Rating and Fire Prevention Bureau asking a number of questions relative to interpretation of N.B.F.U. Pamphlet No. 73. These questions were answered later that month. We quote the more important:

Question: It is recognized that a telephone on an individual circuit may be classed as complying with Item 15 of the Schedule, and therefore, would be suitable as a box under Item 18. Can credit be allowed for single party phones in Residence, Office, etc., in areas not covered by public boxes?

Answer: There is presently no provision in our Grading Schedule nor in our Standards for Municipal Fire Alarm Systems. (Pamphlet No. 73) for allowing credit for single party phones in residences in areas not covered by public boxes.

Question: With a telephone type of fire alarm system, would it be necessary to have trunk lines to the fire alarm office from each exchange? Would this depend upon whether the exchange was manual or automatic? In connection with the above we would call your attention to the fact that at certain times of the day all the trunk lines between exchanges may be "busy." This is especially true at times of disaster, or even when there is a big fire. If, therefore, a person in the Audubon exchange area wanted to call Fire Alarm Headquarters, which is in Magnolia exchange area, there may be a delay which could result in loss of life or heavy destruc-

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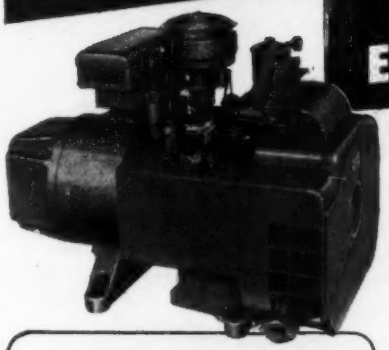

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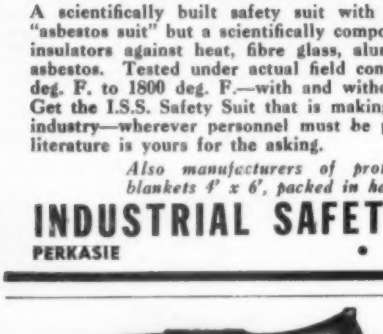

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tion of property.

Answer: The question does not specify the kind of telephone fire alarm system. If telephones in residences are meant, a sufficient number of the line trunks must be provided between exchanges to prevent all being busy at a time, unless alternate paths through other exchanges are availbale. It would not then be necessary to have trunks to the fire alarm office from each exchange.

Question: One of the claims made for the advantage of telephone service over a fire alarm telegraph system has been that only a small per cent of telephone alarms are "maliciously false," but that a high per cent of box alarms are of that character. Is there anything inherent in a street telephone for public use which makes it less susceptible to "malicious false" alarms?

Answer: No, neither is it likely that a street telephone would likely be more used for transmitting alarms than a coded street box.

Question: In considering Fire Alarm System . . . in a City using street telephones for public use, would the fact that the alarm went through the exchange result in deficiency points, even if fire alarm headquarters were fireproof and otherwise without deficiencies?

Answer: Yes; deficiencies would be charged for all buildings through which the circuits passed if an abnormal condition in those buildings might prevent receipt of an alarm. A deficiency could also be applied, even in a fireproof exchange building, for connection of such circuits to a telephone main frame.

Question: Referred to Schedule Fire Alarm System, Items 17 and 19, and asked about tests of street telephone boxes and circuits, and who would make them; also if tests by the telephone company, what check would the city have?

Answer: Assuming the telephone circuits were under constant electrical supervision, street telephones should be inspected and tested for operability with the same frequency as now required for coded boxes. If tests are made by the telephone company personnel, a record of boxes tested would be submitted to the Fire Chief or other Municipal Official and could be checked by the Fire Alarm Operator receiving the test call.

Question: In Applying Schedule Fire Alarm System, Item 14, would a deficiency apply if the circuits serving the street telephone boxes went through the usual telephone connecting racks?

Answer: Yes.

Question: We understand the Bell Telephone Companies do not guarantee service and therefore full credit for telephone street boxes apparently would not be allowed in a grading, that is, even though twice as many were installed than would be provided for a telegraph fire alarm system, there would be a 50% deficiency. Is this correct?

Answer: If the telephone company does not guarantee service and if the ordinary type of open circuit street boxes are provided, there would be a 50% deficiency charged. If a firm contract, with penalty clauses, was made and if the telephone street boxes had equivalent reliability and adequacy to coded street boxes, they would be accepted on the same basis as coded boxes.

Question: Could street telephones be connected to cable run on building walls, over roofs, and under frame awnings?

Answer: A deficiency charge would

be made for such type of construction.

Question: Was it not the thought of the National Board of Fire Underwriters that telephone service was commonly available in almost all communities and such a place, with no fire alarm, would have a deficiency of 350 points, as against a place with no telephone service and no fire alarm service, which receive 500 points; but that in those places which have a telegraph (one that transmitted and recorded a code) there could be zero deficiency, except where the telephone alarms were not adequately handled, in which case the deficiency could be 100 points?

Answer: This was the thought, based on the ordinary type of telephone service, using open circuits and depending solely on voice transmissions for locations of alarms. However, there is nothing sacramental about coded systems for fire alarm and if another type of system is developed having reliability and adequacy equivalent to coded systems, it must be recognized. The A.T. and T. and the Bell Laboratories are presently engaged in the development of such a telephone system which they believe can be made to have equivalent reliability and adequacy. Whether it does or not remains to be seen, but if it does, we would recognize it to the degree to which it complies with Pamphlet No. 73.

Conclusions and Recommendations

In its conclusions and recommendations the survey-report pointed out that mobilization of fire forces is of vital importance in emergencies and it is essential that not one, but two or more means of communications to mobilize the fire department be provided. It complimented radio as an invaluable communication facility but stressed the fact that it cannot be used as the sole means of communication. "Until further development" it added, "underground metallic circuit communications are essential."

It made the point that all of a city's taxpayers are entitled to equal protection of life and property. A fire alarm system serving only the congested value district would not afford equal protection to all. In addition, the elimination of fire alarm boxes in residential areas would be false economy in view of the fact that the large expenditures for underground cables necessary to serve the congested value district and connect fire alarm headquarters with fire stations would not be substantially reduced.

"Adequate protection against loss of life and property cannot be provided by the use of home and business telephones (alone) to send alarms to fire alarm headquarters" it stated, and it concluded with this statement:

"Considering all factors, it is apparent that the needs of the citizens of New Orleans will be best met by the installation of a modern and adequate (municipal) fire alarm system completely covering all portions of the occupied areas. The construction cost of such a system is estimated to be Two Million Seven Hundred Thousand ($2,700,000) Dollars. The cost of extending such a system made necessary by the future growth of the City will be low. The use of Southern Bell Telephone and Telegraph Company equipment in accordance with their proposal cannot

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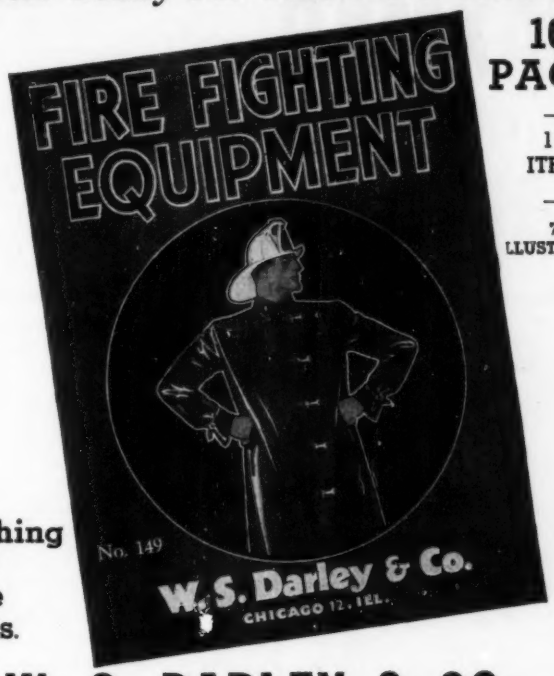

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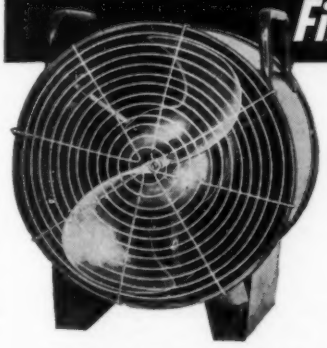

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be justified on the basis of cost to the City of New Orleans. . . ."

The following recommendations are made:

"1. That an Adequate Fire Alarm System contining four thousand (4,000) Fire Alarm Boxes based upon the Design Criteria used in the survey be constructed for the City of New Orleans.

"2. That the City of New Orleans secure the construction of an Adequate Fire Alarm System through competitive bidding from Plans, Specifications and Contract Documents prepared by a Consulting Engineer."

News of the Manufacturers

(*Continued from page* 1118)

sign on Acme gas masks and canister equipment."

With a background of 31 years in the safety field, Mr. Glidden has had wide experience in the sale and manufacture of safety equipment. Prior to his association with Acme in 1946, he was with Cities Service Company, Davis Emergency Equipment Co., Bullard-Davis, Inc., and E. D. Bullard Co.

Mr. Tamandl served for 10 years with E. D. Bullard Co. before joining Acme. Mr. Flood was formerly with Sears Roebuck & Co. in materials inspection and joined Acme following five years of active naval duty.

New Fire Alarm Booklet

A new 24-page booklet, describing the operation and advantages of a Municipal Fire Alarm Box System, has been published by The Gamewell Company.

The booklet outlines the advantages of such a system from the standpoints of the average citizen, the store owner, the banker and the manufacturer. In addition to giving figures on fire losses, the booklet shows a typical city layout on which are indicated various locations for essential equipment such as fire alarm boxes, police recording devices, etc.

Copies of the booklet are available free from The Gamewell Company, Newton Upper Falls, Mass.

Krulee Now With Cardox

Alfred W. Krulee, formerly fire prevention engineer of the Department of the Navy, Bureau of Aeronautics, and widely known among the nation's fire fighters, is now associated with Cardox Corporation, it is announced by Felix C. Rodgers, vice-president.

Mr. Krulee will be connected with engineering and sales of foam and fog appliances, with headquarters at the Chicago Office, 307 North Michigan ave.

Wm. C. Dreher With Waterous Sales

Wm. C. Dreher has taken the place of A. A. Anderson as sales engineer of Waterous Company, St. Paul, Minn.

He is a graduate mechanical engineer, most recently on active duty as a reserve lieutenant with the U. S. Navy. He is located in Milwaukee where he handles a number of related lines, including Waterous rotary pumps.

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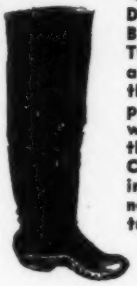
Oklahoma City 3, Okla.

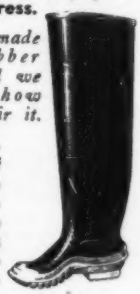
Fireman Save that Boot!



Don't discard those Boots just because the TOPS are worn or torn above the knee. Ship them all to us by express or parcel post. We will completely renew them with 15" TOPS. Cost $4.25 per pair, saving you $10 or more on a new pair. We pay return express.

BEFORE

If it's made of Rubber material we know how to repair it.



AFTER

All work is under personal supervision of HARRY GODFREY, who holds official endorsements from many Fire Chiefs, and who has had 30 years' experience in the reconditioning and repairing of

RUBBER BOOTS, TURNOUT COATS,
RUBBER RAINCOATS,
INDUSTRIAL RUBBER CLOTHING, Etc.

All Work Thoroughly Guaranteed

GODFREY RUBBER CO.

32 Union Square East, New York 3, N. Y.

The New Improved Dayton

COMBINATION EXPANDER

6 FEATURES IN 1

Expander for Hose Sizes from ¾" to 3"
Greater Expansion Greater Economy
Easy to operate
Segments Furnished with Adjustable Spacer
Visual Indicator to Determine Amount of Expansion

BE PREPARED FOR ANY EMERGENCY

THE COST IS LOW
Send for Illustrated Bulletin

Dayton Fire Equipment Co.

1242-48 W. 2nd St., Dayton 7, Ohio

St. Thomas Fire Department

(*Continued from page* 1106)

dara held his audience, of about two thousand persons, under his full command with his exhortations of the dangers of fire. Said Chief Gandara: "You make sure that your money is secure in a bank, but are you careful to protect your property against fire." The Navy Fire Marshal for the Antilles Department, Leo Simms, expressed his satisfaction at being present and offered his assistance at any time he might be needed. The Governor spoke briefly on the progress the reorganized fire service is making. Attorney Edith L. Bornn, Chiarman of the Citizens' Fire Protection Committee, spoke at length and expressed the appreciation of the Committee for the splendid cooperation the public had given to the Committee's efforts and urged continued support for the municipal fire service. Attorney David A. Maas, Chairman of the Committee on Information and Publicity, did an excellent job as our Master of Ceremonies.

The Fire Prevention Week came to a very successful ending with the First Annual Fireman's Ball at the Grand Hotel in mid-town Charlotte Amalie. The total receipts from the week's fund raising activities went well over the goal of $2,500. The public shared in the efforts of the fire service and the Citizen's Fire Protection Committee by contributing with their dollars and putting to good use the information regarding fire prevention methods which were stressed all during the week.

Hamilton, Ont., Needs More Air Raid Sirens

P. A. S. Todd, head of the Hamilton, Ontario, Civil Defense Committee, stated that he believes that 45 sirens will be required to give this city of 205,000 population an adequate warning system. In the recent test of the seven sirens the sound did not reach all the areas.

JOHN KARL LEE.

City Pays $1 for Firehouse

Full title to a Richmond, Calif., firehouse passed from the U. S. Government in September when the city council voted to pay the price, $1, for a bill of sale.

Seems that the Housing and Home Finance Agency had owned a part of the firehouse at South 35th Street and Cutting Boulevard. The city had been making monthly payments since July, 1949, through last June. According to City Manager Wayne E. Thompson Richmond had paid several thousands of dollars for the government's share of the building. But at that, there are those who claim it was a real bargain.

Forestry Radio Pays for Itself

"Little doubt that many times the cost of the industry's entire radio system has been saved due to the quick communications in time of forest fire emergencies alone" was expressed before 2,000 representatives of the forest industry during the Pacific Logging Congress in Seattle, Wash., by Robert W. Olin, National Chairman of National Forest Industries Communications, early in November.

COMPARE

—AND SAVE!

This is the light that has saved FIRE departments thousands of dollars. 110 volts, 300 watts, AC or DC. Compare this light with others selling up to $75.00.

FLOODMASTER $21.00

Order from your dealer or direct including the name of your dealer.

ARGUSLITE CO.

BLUE RIDGE SUMMIT, PENNA.

WHY *Janesville* IS FIRST

The "DEE-RING and SNAP..."

For nearly 50 years the craftsmen at the Janesville Apparel Company have been designing quality fire fighting apparel. This constant search for quality has led to our development of the riveted "quick-hitch" D-Ring and Snap now common on all fire coats . . . famous for rigidity and strength!

Developed by Janesville . . . for Janesville Quality!

Check the Other Features . . .

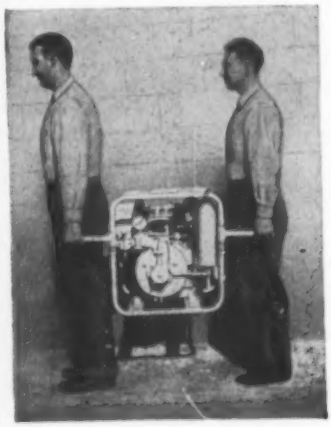
- Detachable wool or flannel lining.
- Finest Materials.
- Rugged Construction.
- Custom-built sleeve and coat lengths.

Janesville APPAREL CO.

JANESVILLE, WISCONSIN

HALE Type FZZ

- Quick-Starting
- Portable
- Compact
- Powerful
- Versatile



Above—Frame-mounted FZZ can be easily carried by two men. It is also available mounted on rubber cushioned steel channels, or on two truck-type wheels.

Fire Companies frequently write us telling of the many practical ways they use their portable Hale type FZZ, such as the following:

- For fighting field or forest fires from moving trucks.
- For "wetting down" and standby use, thus releasing major equipment.
- For pumping out flooded cellars and elevator shafts after fire, flood or other emergency.
- For relaying water to pump or booster tank from sources inaccessible to major Fire Pumpers.
- For factory protection in fighting fires before major equipment arrives.
- For fighting oil or other type fires requiring foam. (Built-in foam proportioner available when specified.)

The FZZ will supply from draft, 60 GPM at 90 lbs. pump pressure; and 100 GPM at 70 lbs. Can supply two capable streams through 1½" lines, using nozzle tips up to ½".

Note: Discharge Adapter can be supplied for use with 2½" fire hose.

Write for new folder today.
Ask for Demonstration.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN PA.
Fire Pumps in All Standard Capacities

Mr. Olin, of Potlach Forests, Inc., in his radio committee report to the logging group, said that the "novelty of this new indispensible tool of radio communications has worn off and has been displaced by a steadily improving type of radio communications."

Prints for Lovers of Old Engines

The Viking Press, 18 E. 28th street, New York 17, N. Y., has just published The American Calendar, Fire Engine Edition, 1954, which should bring delight to lovers of the "ould macheenes."

The calendar, which is spiral-bound on heavy paper, contains a series of accurate, colorful prints of old fire engines, most of them not previously published in color print form. The illustrations are the work of Evelyn Curro of San Francisco, whose prints of cable cars and old locomotives have attracted wide attention.

In addition to the calendar and reproductions, there is a brief story about the old machines. The calendars measure 6½ x 8½ and are priced at $1.75 each.

Ventilation

(*Continued from page* 1104)

LIMITS OF EXPLOSIBILITY

According to the late Professor Bunte, of Karlsruhe, the limits of explosibility can be greatly varied by circumstances, such as the lateral dimensions of the containing vessel (or structure) the method of ignition, volume of gas present, moisture content of same, etc. The same authority gives the following values in the case of electrical ignition, the mixture of air with the several gases mentioned exploding when the proportion of gas attains the following percentages:

	Range of Explosibility (%)	Per Cent
Carbon monoxide	16.6—74.8	58.2
Hydrogen	9.5—66.5	57.0
Water gas	12.5—66.6	54.1
Acetylene	3.2—52.2	49.0
Coal gas	8.0—19.0	11.0
Ethylene	4.2—14.5	10.3
Alcohol vapor	4.0—13.6	9.6
Methane	6.2—12.7	6.5
Ether vapor	2.9— 7.5	4.6
Benzol vapor	2.7— 6.3	3.6
Pentane	2.5— 4.8	2.3
Benzine vapor	2.5— 4.8	2.3

Above and below these limits no explosion occurs. The explosion of the mixtures can be prevented by additions of 7½—10 per cent of carbon dioxide.

LIGHTER AND HEAVIER THAN AIR GASES

To facilitate solution of the general problem respecting the comparative advantages of roof and floor ventilation (where no fire is involved), lists of the gases (g) and vapors (v) respectively lighter and heavier than air are given by Dr. Von Schwartz as follows, the specific gravity of air being taken as a unity:

Lighter Than Air (Roof Ventilation)*

Specific Gravity	
0.069	Hydrogen (g)
0.400-0.600	Coal gas (g)
0.553	Pit gas (Firedamp) (g)
0.588	Ammonia (g)
0.700	Wood gas (g)
0.898	Acetylene (g)
0.945	Hydrocyanic acid (g)
0.967	Ethylene (g)
0.967	Carbon Monoxide (g)

Water gas, generator gas, Dowson gases and similar gases differ considerably in density according to their composition, but all are lighter than air.

Heavier Than Air (floor ventilation)

Specific Gravity	
1.036	Ethane (g)
1.105	Oxygen (g)
1.120	Methyl alcohol (v)
1.185	Sulphuretted hydrogen (g)
1.382	Allylene (g)
1.451	Propylene (g)
1.520	Propane (g)
1.527	Nitrous oxide (g)
1.530	Ethyl aldehyde (v)
1.613	Alcohol (v)
1.617	Methyl ether (g)
1.738	Methyl chloride (g)
1.800	Cyanogen (g)
1.935	Butylene (g)
1.004	Butane (g)
2.200	Sulphur (v)
2.448	Chlorine (g)
2.565	Ether (v)
2.645	Carbon disulphide (v)
2.770	Benzol (v)
3.147	Amyl alcohol (v)
4.215	Chloroform (v)
4.355	Phosphorous (v)
5.700	Selenium (v)
8.896	Tellurium (v)

*Fire Engineering.

As noted above, ventilation referred to is for the purpose of relieving the building of gases mentioned and is not to relieve fire conditions. In other words, it is assumed that no fire is present. Ventilation in connection with fires is an entirely different proposition, for the strong drafts created will carry upward almost any gas present.

QUANTITIES AND TOXICITY OF GASES

The following table affords some idea of the amounts and toxicities of gases given off by ordinary materials with which the fire fighter comes in contact, when affected by fire or heat.

Gases	Chem. Formula	Newspaper	Rubber Insul'n	Wool Hot	Wool Cool	Silk Hot	Silk Cool	Wood	Gasoline
Carbon Monoxide	CO	36.5%	10.1%	6.8%	17.7%	5 %	12.5%	2.7%	0.6%
Carbon Dioxide	CO_2	49.4	20.1	13.4	33.1	1.7	24.0	5.7	3.0
Hydrogen Sulphide	H_2S	...	4.1	9.9	25.8	...	...	...	...
Sulphur Dioxide	SO_2	...	3.4	...	...	...	...	...	...
Methane	CH_4	8.1	8.4	3.6	9.5	0.7	9.6	...	...
Hydrogen	H_2	4.4	13.4	...	...	2.2	24.9	...	...
Ammonia	NH_3	...	...	57.2	4.0	55.0	7.9	...	...
Acetic Acid	$HC_2H_3O_2$	1.6	...	...	...	...	...	1.01	...
Prussic Acid	HCN	...	...	5.8	1.8	12.3	1.2	...	...
Unsaturated Hydrocarbons		...	22.6	1.4	3.6	1.1	1.8	1.4	...

EFFECTS OF TIME UPON IGNITION TEMPERATURE OF WOOD*

Name of Wood and Density (Water = 1)	Duration of Exposure Minutes Before Ignition 180 C 356 F	200 C 392 F	225 C 437 F	250 C 482 F	300 C 572 F	350 C 662 F	400 C 752 F
Longleaf pine, density 0.70	14.3	11.8	8.7	6.0	2.3	1.4	0.5
Red oak, density 0.68	20.0	13.3	8.1	4.7	1.6	1.2	0.5
Tamarack, density 0.60	29.9	14.5	9.0	6.0	2.3	0.8	0.5
Western larch, density 0.48	30.8	25.0	17.0	9.5	3.5	1.5	0.5
Noble fir, density 0.46	...	...	15.8	9.3	2.3	1.2	0.3
Eastern hemlock, density 0.38	...	13.3	7.2	4.0	2.2	1.2	0.3
Redwood, density 0.35	28.5	18.5	10.4	6.0	1.9	0.8	0.3
Sitka spruce, density 0.34	40.0	19.6	8.3	5.3	2.1	1.0	0.3
Basswood, density 0.31	...	14.5	9.6	6.0	1.6	1.2	0.3

*Forest Products Laboratory Bulletin R1464, 1944.

"ATOMIC" ROCKET SIREN

WITH 360 DEGREE FLASHING

RED LIGHTS

•

The most effective warning signal you can get! Assures safety for your men and vehicles.

OTHER SIZES & STYLES

FOR FREE CATALOG WRITE DEPT. No. 27

The SIRENO COMPANY, Inc.

216 WILLIAM ST., NEW YORK 38, N. Y.

McINTIRE GATE VALVES

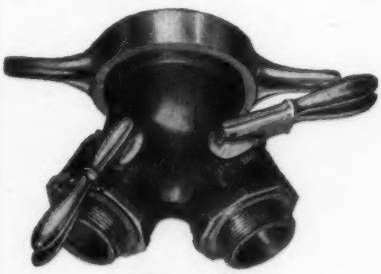


Fig. 164AN

4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

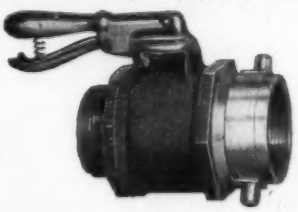


Fig. 163

Made either Right Hand or Left Hand 2½" male x female, gate valve.

F. N. McINTIRE BRASS WORKS

377 PUTNAM AVE., CAMBRIDGE 39, MASS.

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With Our Readers

Masks Used in Miami Department

To the Editor:

No doubt you have read the article in the August issue of Reader's Digest, written by Paul W. Kearney, regarding Chief Chase and the Miami Fire Department.

Since this article was published, we received a number of requests for information regarding the type of mask we use and how the masks are worn. In each case it was necessary to enclose a set of pictures showing just how the mask is worn on the bunker coat and this is developing into rather a costly matter.

Front and back views of Miami fireman carrying gas mask.

It occurred to us that possibly FIRE ENGINEERING would like to carry an article and print the pictures as a follow up to the Reader's Digest article.

We use the Mine Safety Appliance Company All Service Mask. These are purchased without the carrying case and are carried on the Bunker Coat at all times. We have enough masks to equip every position on the apparatus and each morning the offgoing shift turns the masks over to the oncoming shift. The oncoming shift checks and tests the masks to be certain they are in working order.

At first we had the canister pockets, straps, snaps, etc., put on by one of the local awning companies. We found, however, that for a small additional charge, the Midwestern Mfg. Company would manufacture the bunker coats with the pocket, etc. This has proved, naturally, to be neater and more satis-

YOU CAN DEPEND ON

DANDRY

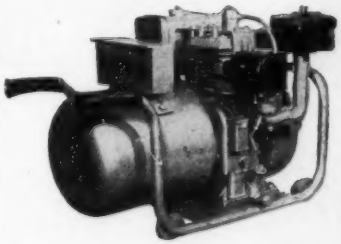
SALVAGE COVERS

- Water, rot and fire resistant.
- Won't crack when cold or get stuck when hot.
- Light weight. White or dark green color. Durable, closely woven quality canvas.
- 12' x 14', 12' x 18', 14' x 18'.

C. R. DANIELS, INC. DANIELS, MD.

New York	Chicago	Boston	Dallas
St. Louis	Orange	Detroit	Richmond
Milwaukee	Cleveland	Buffalo	Baltimore
Cincinnati	Philadelphia	Charlotte	Pittsburgh

NEW . . . 2000 WATT FIRE DEPARTMENT ELECTRIC PLANT



Designed for operating floodlights, radio, pumps or blowers. Two men can carry it—and one man can wheel it around! 2000 watt 115 volt, A.C. Takes little space on the truck . . . only 22 x 18 x 20 inches high. Write for information on this and other Electric Plants built by "U.S." for fire department use.

UNITED STATES MOTORS CORP.

420 Nebraska St.

Oshkosh, Wisconsin

LEONARD
ROTARY GEAR PUMP

A new, better, APPARATUS PUMP!

Here's a pump you can be proud of! Delivers 150 GPM at 150 lbs. Beautifully designed and built by skilled New England craftsmen. Specify on new apparatus or use as replacement. Let us send you complete data and name of nearest dealer.

National Distributor

AMERICAN FIRE EQUIPMENT CO.
717 BOYLSTON STREET, BOSTON 16, MASS.

A New
RATCHET HYDRANT WRENCH
PATENT PENDI
REQUIRES ONLY 4" SWING!
OPENS ANY HYDRANT or GATED HYDRANT
FASTER and EASIER to OPERATE
ACCLAIMED BY ALL
as the most practical wrench ever invented for quick service—Hydrants too near a fence, wall, utility pole or caps too close to the ground can be turned on or off in a matter of seconds.
Write for Complete Information
THE S-T HYDRANT WRENCH CO.
P. O. Box 921
HOLYOKE, MASS.

factory. It is what is known as the "Miami Type"

Instead of the conventional one piece chin strap on the helmets we have a two piece strap with several snaps so that the strap can be adjusted to the most comfortable position with the mask off or on.

The mask in no way interferes with a man's operations yet, if needed, the mask is immediately available and there is no time lost. By having the mask immediately available when needed, many man hours have been saved because the men are not knocked out by smoke and gases.

We believe that Miami is about the first city to have all men equipped with masks, as well as being one of the pioneers in the use of wetting agents and fog.

Very truly yours,
N. L. WHEELER
Chief, Division of Fire.
Miami, Fla., Sept. 22, 1953

Suggests New Method for Computing Fire Losses

To the Editor:

For quite some time it has been my studied opinion that our present method of reporting, computing and publishing fire losses is not completely fair to our fire-fighting forces—both professional and volunteer.

Despite country-wide improved courses of training and country-wide teaching of fire prevention, total fire losses in the United States, with the exception of two years in the past ten, have constantly shown increases.

At first glance these constantly increased losses would seem to make this training appear futile and reflect upon these organized fire departments' ability to cope with the fire problem, which reflection is unfair to the firemen and misleading to the public.

To correct this situation I propose that these losses should be computed and published *upon a percentage basis* set against the total value of buildings, stocks, equipment, furniture and machinery susceptible to damage by fire in any town, city, county or state, which said system would, without question,, show a reduction in *percentage* (since in no year is there more property destroyed than is produced) and in consequence the firemen of the nation would receive proper credit for their improvement in knowledge and techniques producing an actual *percentage* reduction, even with an increase in dollar loss.

If you believe these proposals are sound and constructive you have my permission to give them furher publicity.

WILLIAM KIRK
Parliamentarian,
American Association
of Firemen

Young Fire Setters Get Court Ruling

Three young brothers who, police say, confessed setting several recent fires in Richmond, Va., one of which caused $60,000 damage, were ordered placed in boarding homes or institutions.

The boys, aged 8, 9 and 11, were arrested July 11, and later showed fire and police officers how they entered the rear of the Mitchell and Hotchkiss Printing Company, Richmond, Va., in

GIANT CHROME FLASHER
FRONT AND REAR (Type FRF)

Powerful, pulsating, 60 second flashes of RUBY red visible for blocks. Nearly 8" in diameter yet light and easy to mount on its aluminum pedestal.

Here is class, quality, and performance unequalled at a price that can't be matched.

Ask Your Supplier or Write Today For Illustrated Catalog in Colors

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the world's best

LIFE NET

in use in thousands of departments—time tried and proven—as the best and fastest means of rescue. All drop-forged hinges, with spring recoil mechanism like that on modern artillery. Specify ATLAS LIFE NETS on all new apparatus!

ATLAS SAFETY EQUIPMENT CO., INC.
27 WARREN ST., NEW YORK 7, N. Y.

FIRE LITE ALARMS

We Strive To Save Lives, Too!

Through continuous research and in cooperation with fire and safety officials, we have perfected a dependable home fire alarm system. It is a great satisfaction to know that our efforts have been responsible for saving many lives in fires.

Information about the Fire-Lite Home Fire Alarm System can be obtained by writing to us.

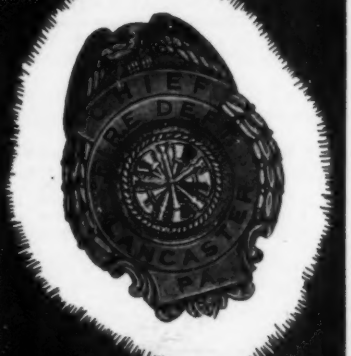
FIRE-LITE ALARMS

Incorporated

190 Fulton Terrace
New Haven 2, Conn.
Dept. 123

Member National Fire Protection Association

Firemens BADGES by EVERSON-ROSS



Write For Folder
EVERSON-ROSS
89 CHAMBERS ST NEW YORK 7 N Y

July and ignited some paper. The resulting fire caused $60,000 loss.

The children also confessed setting fires in a bookstore, an electrical products company, and in another building, "because we like to see the fire engines run."

Judge J. Hoge Ricks, Richmond Juvenile and Domestic Relations Court, who ordered the juveniles placed in homes or institutions, acquitted the parents of charges of neglecting the youngsters. He said although the parents did not keep a strong hand on the children, they were not involved in starting the fires.

What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of November, 1953.

Month Ending November 30, 1953

Anniston, Ala. — Amusement center, concession building and bathhouse at Crystal Springs resort spot, destroyed.

Queen Creek, Ariz.—Desert Gin of Producers Cotton Oil Co., 12 miles southeast, damaged.

Arkadelphia, Ark.—Building owned and occupied by Elk Horn Bank & Trust Co., also occupied by J. B. Fuller's drug store and law office, damaged.

Pocahontas, Ark.—Taylor Motor & Implement Co. building destroyed; adjoining McFatridge Machine Shop damaged.

Grass Valley, Cal.—Storage shed of Matson Lumber Co. destroyed.

Lompoc, Cal.—Tom Parks Vegetable Packing Plant destroyed.

Paso Robles, Cal.—Paso Robles Elementary School destroyed.

San Diego, Cal.—Hotel San Diego ballroom, bar, kitchen and sun deck, damaged. Cigarette.

Santa Ana, Cal.—Freight warehouse owned by Southern California Freight Lines and a local furniture store, destroyed.

Wilmington, Cal.—Union Oil Co. refinery damaged extensively.

Grand Junction, Colo.—Valley Livestock Co. and sales ring, destroyed.

New Milford, Conn.—Hansen & Sons, Inc., lumber yard destroyed.

Medley, Fla.—Mushroom growing and packing plant destroyed.

Tampa, Fla.—Building occupied by a cabinet shop destroyed.

Atlanta, Ga.—Warehouse of Southern Spring Bed Co. damaged.

Atlanta, Ga.—Valuable antiques stored in a house at 208 McDonough Boulevard, S.E., damaged. Defective wiring.

Atlanta, Ga.—Building occupied by Bradley & Sons, destroyed. Royal Dinette Co., Southeastern Parts Distribution Center of International Business Machines Corp., damaged.

Louisville, Ga.—Louisville Fertilizer and Gin Co. damaged.

Baldwin, Ill.—Firehouse destroyed.

Chicago, Ill. — Storage building in Riverview Amusement Park destroyed; building housing a shooting gallery and roller skating rink, damaged.

Highland, Ill.—Building housing three stores and a meeting hall, including a sheet metal shop, hardware store and women's wear store, destroyed.

Libertyville, Ill.—Hay barn and two machinery sheds at the show farm of Hawthorne-Melody Farms Dairy, south, destroyed.

Colfax, Ind.—Warehouse owned by Harry Keyes, garage owned by Herman Bradshaw and Pennsylvania RR. and New York Central System station, destroyed.

Delphi, Ind.—Four buildings on public square, destroyed.

Lafayette, Ind.—Continental Baking Co. garage and warehouse damaged.

Lawrenceburg, Ind.—Emmanuel Lutheran Church destroyed.

Rolling Prairie, Ind.—Lumber shed of LaPorte County Farm Bureau Co-op, destroyed.

Terre Haute, Ind.—Campbell Soup Co. plant destroyed.

Ackley, Ia.—Building on George Clawson farm, 8 miles northeast, destroyed.

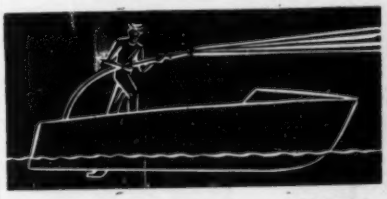
Cropper, Ky.—Cropper Elementary School in Shelby County, destroyed.

Louisville, Ky.—Warehouse of Louisville Tin & Stove Co. destroyed.

Louisville, Ky.—Campbell & Summerhayes Lumber Co. warehouse, destroyed.

Owenton, Ky.—Owenton Motor Co. damaged. Grass fire.

AN *Announcement* OF TREMENDOUS IMPORTANCE TO FIRE FIGHTERS



THE REVOLUTIONARY *NEW*

HYDROJET

AVAILABLE WITH KERMATH 61 H.P. SEA-JEEP ENGINE

This amazing new propulsion unit has been developed to propel craft without a propeller or rudder by taking water from outside the boat and discharging it as a high speed jet stream under the stern. A simple connection provides a high or low pressure water stream for fire fighting using standard hose. A Hydrojet powered boat operates efficiently in shallow water, in silt, debris, and in areas where ordinary fireboats cannot operate.

For further details and specifications write to—

KERMATH MFG. CO.

5885 Commonwealth Ave., Detroit 8, Mich.
A subsidiary of Barion Steel Corp.

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BUNKER SUITS

FOR COMFORT & PROTECTION

WE ARE DISTRIBUTORS FOR

SIREN BOOTS

We have been supplying **FIREMEN'S CLOTHING** for over 25 years.

Any fireman can have a catalog by writing—

BODY-GUARD MANUFACTURING CO.

ST. JOSEPH - - MISSOURI

Baltimore, Md.—H. Sapperstein Co. plywood warehouse destroyed; extended to Purex Products, Inc., chemical plant and Gerald K. Heiler Co., electronics plant, same building.
Catonsville, Md.—Kenwood Manor apartments, damaged.
La Plata, Md.—Thunderbird Hotel damaged. Overheated furnace.
Pocomoke City, Md.—Warehouse and factory of William B. Tilghman Fertilizer Co. destroyed.
Upper Marlboro, Md.—Garage owned by Eugene Chaney, a hauling contractor, destroyed. Oil burner.
Dorchester, Mass.—Boston Milling Co., a woodworking firm, destroyed.
Fall River, Mass.—Borden School, North Park, destroyed.
Lincoln, Mass.—Cattle and barn of James DeNormandie, destroyed.
Milton, Mass.—Copley building destroyed.
Escanaba, Mich.—Machine shop owned by city and occupied by Northern Motors Rebuilding Co., destroyed.
Harrisville, Mich.—Alcona County courthouse destroyed.
Saginaw, Mich.—Building occupied by Sherman Dress Shop, Winkelman's Dress Shop, Bujouves Shoe & Hat Shop and Herbert Dress Shop damaged.
Saginaw, Mich.—Washington Elementary School destroyed.
Union Pier, Mich.—Royal Blue Grocery and adjacent Schnable's tavern on Highway US 12, destroyed. Defective wiring.
Brainerd, Minn.—Quarter block adjoining row of wood buildings in downtown business district, including a new supermarket, cafe, doctor's office and a plumbing shop.
Minneapolis, Minn.—Apartment building destroyed.
St. Paul, Mich.—Fort Snelling Veterans Administration office building, No. 33 on Highway 100 near its intersection with Highway 5, destroyed. Faulty heating pipe.
Clarksdale, Miss.—Municipal Auditorium damaged. Someone tossed lighted match.
Clarksdale, Miss.—Clarksdale Laundry destroyed.
Greenville, Miss.—Delta Co-operative Compress damaged.
Oxford, Miss.—Sigma Alpha Epsilon fraternity house on University of Mississippi campus damaged. Defective chimney.
Picayune, Miss.—Halfway Club, Three Oaks Club, Whitfield's and County Line Club, south, just across Pearl River in Hancock County, destroyed.
Clinton, Mo.—Smoke House Liquor Store and Smoke House Cafe destroyed.
Cuba, Mo.—Office building, service station and cafe owned by Mrs. C. C. Cox, destroyed.
Jefferson City, Mo.—Nebel Motor Co. plant destroyed. Defective wiring.
Springfield, Mo.—Springfield stockyards destroyed.
Anaconda, Mont.—Johnson's Ford garage, Anaconda laundry, Finnegan Mortuary, Anaconda bakery in business district, destroyed. Nash garage damaged. Explosion.
Butler, N. J.—Town Dress Shop destroyed.
Long Branch, N. J.—Pam Rogers dress factory damaged.
Long Branch, N. J.—Price's Hotel damaged.
Newark, N. J.—Three vacant tenement buildings 13th street and High street and an apartment building at 392-4 Central avenue damaged.
Orange, N. J.—Beard School damaged.
Seabright, N. J.—Charles Manor Hotel, adjoining Sea Bright Hotel, real estate office and post office, destroyed. Oil heater.
West Atlantic City, N. J.—King's Row Motor Court, a 32-unit motel, damaged. Short circuit.
Woodoridge, N. J.—Hatco Chemical Co. damaged. Explosion.
Ruidoso, N. M.—Ruidoso Bowling Alley, Davis Cafe, Diamond Bar and dwelling on Main street, destroyed.
Amsterdam, N. Y.—Building used for livestock auctions, owned by Graziane Livestock Exchange, destroyed.
Ithaca, N. Y.—Building a block from main business area, occupied by gift shop, dry cleaner's establishment and apartments, destroyed.
Meridale, N. Y.—Buildings on H. A. Delamarter farm on Route 28, Delaware County, destroyed. Spontaneous ignition.
Olean, N. Y.—Building occupied by Acme Milling Co. destroyed. Short circuit.
Penn Yann, N. Y.—Barn on Glenn Anderson farm on Route 4, a mile east, destroyed.
Rochester, N. Y.—Bernz firm, Augmar Furniture Outlet and building formerly occupied by Lyell Collision Paint Service Co., damaged.
Rochester, N. Y.—Our Lady of Mt. Carmel Parochial School destroyed.
Saugerties, N. Y.—Century-old Schoentag Hotel, outside the village, destroyed. Grease boiled over in a deep fryer and spread to some kerosene.
Syracuse, N. Y.—Acme Theatre destroyed.
Goldsboro, N. C.—Dillon Supply Co. and Dillon-Bell Implement Co., destroyed.
Sanford, N. C.—Farmers Flag Warehouse and Griffen's Livery Stable destroyed.
Berea, Ohio—Bowling alley half of Berea Roller Bowl, damaged.
Celina, Ohio—Celina Auto Co., Spriggs Furniture Co., Blue Ribbon Cafe and Nautical Nook confectionery, destroyed. Wollam Aircraft and Marine Products Co. damaged.
Cincinnati, Ohio—Building occupied by Foltzer Electric Co. and Appalachian Coal Co. damaged. Short in electric toy train.

Classified Advertisements

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2½"x10' hard suction hose....$14.50 lgth., cpld.
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Mechanical Foam playpipes (Leading Manufacturer) w/adapter (Cost $50.00 each) .....$8.50 ea.
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REBUILT HERCULES 6 cyl. MOTOR
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FULL COMPLEMENT OF LADDERS
PORTABLE LIGHTING SYSTEM
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1—American LaFrance ladder truck, semi-trailer with rear tiller. Model 17, Serial 5442, Engine 3615. Has aerial ladder. Perfect for small town. Very good condition. Will sell reasonably. Removed from Commission just this month. If you can't afford a new one, you can afford this one. Contact Mr. Turner—
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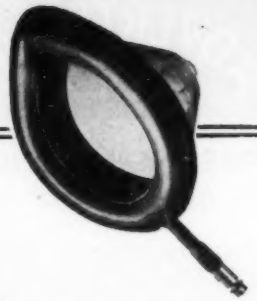

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INTERNATIONAL BRONZE TABLET CO., INC. 150 WEST 22nd ST. NEW YORK 11, N. Y.

Cleveland, Ohio—Kiwanis Lake Tavern at Newbury Center off Route 87, destroyed.
Hamilton, Ohio—A. & P. Supermarket destroyed.
Loudonville, Ohio—Business and apartment building in downtown, including grocery, destroyed. Overheated refrigerator motor.
Mansfield, Ohio—Ohio Lumber & Face Brick Co. plant, which manufactures doors, destroyed. Faulty wiring.
Middle Point, Ohio—Equity Exchange Elevator in Van Wert County, destroyed. Sparks of a welding torch.
New Lexington, Ohio—Tool house and supply room of Millikan & Volik Oil Co., four miles east on Route 669, destroyed.
Sullivan, Ohio—Sullivan Congregational Church destroyed. Sparks from blow torch.
Toledo, Ohio—Plant of Industrial Finishers, Inc., an enameling firm, destroyed.
Mount Park, Okla.—Mountain Park High School building destroyed.
Monroe, Ore.—Monroe Furniture Co. destroyed; McCallum Building, Faubian Grocery and Monroe Feed Co., heavily damaged.
Portland, Ore.—Franklin Hotel Cafe destroyed.
Portland, Ore.—Foster Road Pharmacy and adjoining retail TV station destroyed.
Roseburg, Ore.—Doughty Bros. Lumber Co. destroyed.
Wallowa, Ore.—Bates Lumber Co. destroyed.
Blakely, Pa.—Columbus Grammar School building destroyed.
Conshohocken, Pa.—Plant of C & D Batteries, Inc., destroyed.
Greensburg, Pa.—Warehouse annex of A. E. Troutman Department Store in downtown, destroyed.
Milford, Pa.—Milford Inn, a summer hotel, destroyed.
Oaks, Pa.—Roller skating rink at Indian Head Amusement Park, Perkiomen Creek, destroyed.
Pennsauken Township, Pa.—Campana Art Novelties Co. plant destroyed. Explosion.
Philadelphia, Pa.—Apartment building, 1303 N. 12th street, heavily damaged. Oil heater explosion.
Philadelphia, Pa.—Shirley's Supermarket destroyed.
Philadelphia, Pa.—Sosmetal Products Co. heavily damaged.
Pottsville, Pa.—Building owned by Gus Catsampas, damaged.
Sharon, Pa.—Camp used by Wesleyan churches, damaged.
York, Pa.—Frank Paint & Wallpaper Co., Crystal Cleaners, Inc., and York Bedding Co., damaged.
Memphis, Tenn.—Owen Bros. Livestock Co. barn, once the world's largest mule center, destroyed.
Morristown, Tenn.—Walnut Woodcarving Furniture Co. plant destroyed. Short circuit.
Nashville, Tenn.—Main milling unit of Whitson Lumber Co. destroyed. Defective wiring.
Waxahachie, Tex.—Men's dormitory at Southwestern Bible Institute destroyed.
West Fort Worth, Tex.—Shelling plant of Bain Peanut Co. destroyed.
Farmington, Utah—Lagoon resort leased to Utah Amusement Co., destroyed. Spontaneous ignition.
Springfield, Utah—Club Vegas in northern city limits, destroyed.
Waterbury, Vt.—Waterbury Inn, barn and garage adjacent Waterbury Laundry building, destroyed.
Bluefield, Va.—Graham Christian Church destroyed. Furnace.
Seattle, Wash.—Old French Inn destroyed.
Logan, W. Va.—Tipple of Merrill Coal Co., Big Creek, destroyed.
Martinsburg, W. Va.—Martinsburg Journal building damaged.
Spencer, W. Va.—Four dwellings of Theodore Zappas, Mrs. C. C. Fields, Rex Jarvis, Alma Batten, Dennis Rhodes and Elmer Wright, destroyed.
Milwaukee, Wis.—Town Club destroyed.
Williams Bay, Wis.—Industrial building owned by Horvath Bros.; store; raw materials of Borg Corp. and plumbing fixtures of Harry Breen, destroyed. Spontaneous ignition.
Lacombe, Alta.—Lacombe Hockey Arena and the uncompleted Memorial Hall, destroyed.
Picture Butte, Alta.—Five railroad boxcars and three grain elevators loaded with 214,000 bushels of grain, destroyed.
Hamilton, Ont.—Historic City House Hotel destroyed.
St. Catharines, Ont.—Fruit warehouse, cottage and truck near Lock 1 of old Welland Canal, owned by John Gonos & Sons, damaged.
St. Thomas, Ont.—YMCA Building damaged. Careless smoker.
Toronto, Ont.—Office anud factory building occupied by Gillies Mfg. Co., Toronto Dye & Finishing Works, Alloy Metal Co., Canadian Glass Ornaments Co. and Toronto Toy Co., destroyed.
Coaticook, Que.—Building housing City Hall, police and fire station, damaged.
Montreal, Que.—Plaza Hotel in Chateauguay Basin, 15 miles north west, destroyed.
Quebec, Que.—Warehouse of Terreau and Racine Ltd., a wholesale and retail hardware firm, destroyed.

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that you can buy an

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CUSTOM-BUILT
FIRE ENGINE

for the price of an
ordinary fire truck?

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- **It will stand alone—on ice, snow, roofs, gravel or concrete—without any whip or back-lash.**
- **It takes the place of a monitor nozzle.**
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- **It's an excellent carrying device on a moving hose line—three men can move forward, with a charged line, open under pressure. With hose line attached and nozzle closed, one man can easily move it to another position.**
- **It's one of the greatest fire-fighting tools ever devised—of particular value to undermanned departments.**

Shown in action with the Elkhart Hose Control is the Elkhart J-200 Mystery Nozzle—a fog nozzle capable of discharging up to 475 gallons per minute, set at 30° fog, with 125 pounds nozzle pressure. Its huge output provides an enormous blanket or wall of solid fog.

ELKHART BRASS MFG. CO., Inc.

1902 – FIFTY YEARS OF FIRE FIGHTING PROGRESS – 1952

ELKHART, INDIANA

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DECEMBER, 1953

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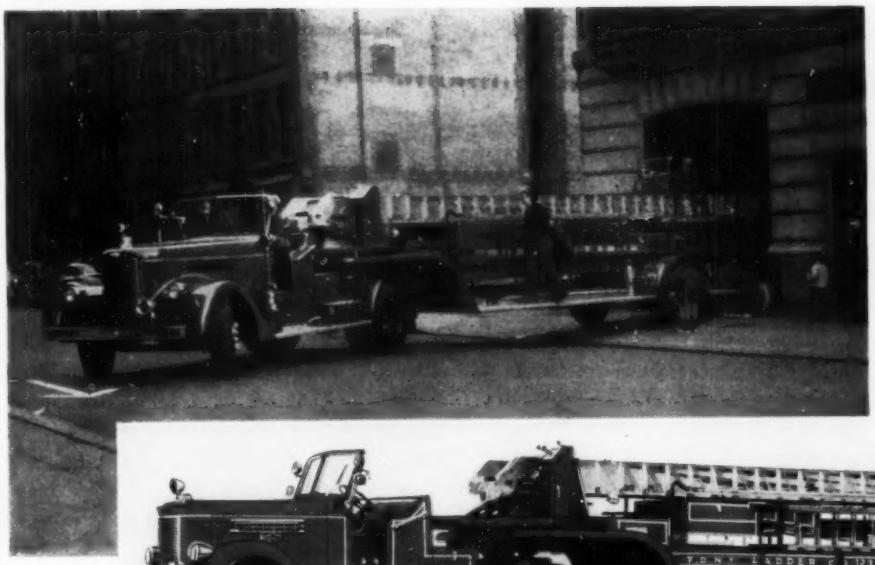
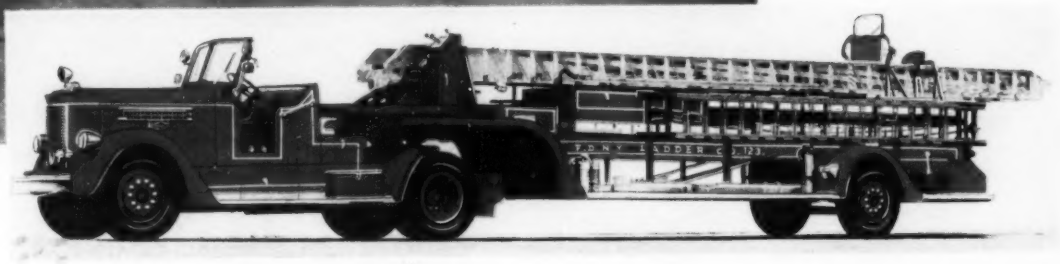
The Fire Engine That Experience Produced





Essential experience is needed to produce successful products in any field, but is of particular importance in the field of fire apparatus production. A fire engine of poor design or faulty construction which does not function properly when the emergency call comes is a useless if not dangerous piece of equipment to have around.

The Pirsch background of experience in the fire apparatus industry of about three-quarters century is reflected in the superior design and fine workmanship found in Pirsch pumpers and ladder trucks which are serving fire departments from Coast to Coast and in many foreign countries.

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"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100' AERIAL LADDER"

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High sustained speed is essential to fast, safe runs. With *all* the power and weight of the truck converted into *powered traction*, four-wheel-drive permits higher *average* speeds without increasing the *maximum* m.p.h. Tight turns, slippery streets, snow-clogged highways needn't make you ease up on the throttle and *break* that steady, mile-eating pace—if your engine's an FWD! True four-wheel-drive provides up to 82% greater tractive ability than rear-wheel-drive trucks on slippery surfaces! That *extra* powered traction assures the margin of safety you *need* to get engine and crew on the spot *in the pink*—ready for the tough job of fighting fire. Make sure your men have the finest *possible* back-up for skill and courage . . . *make that engine an FWD!*

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Ask for your copy of "FWD Fire Engines"; photos and descriptions of FWD equipment carefully chosen by communities all over the country. Let it help you make your choice!

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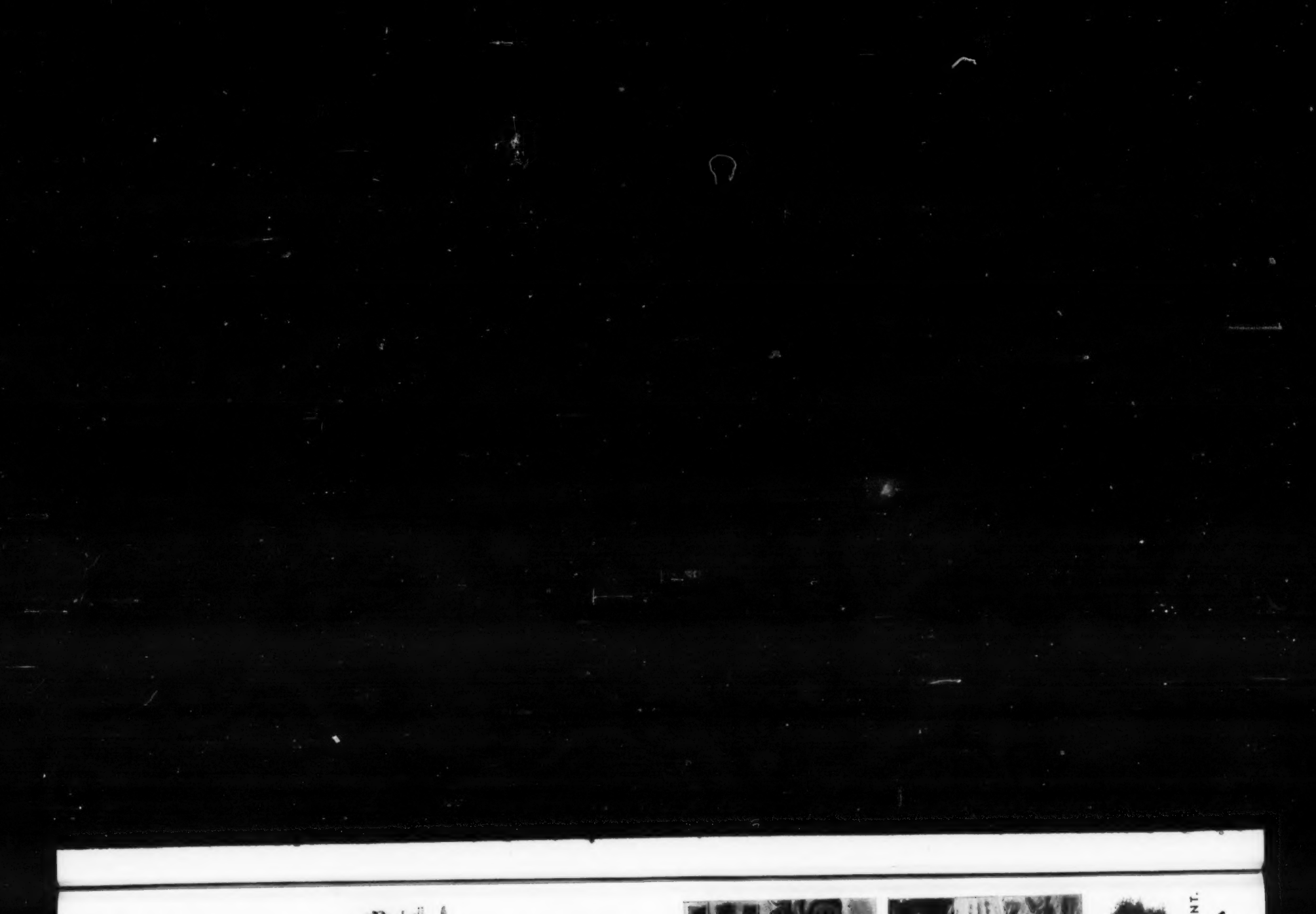
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